THE MODERN SCHOOLMAN

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PRACTICAL REASON, SOCIAL FACT AND THE VOCATIONAL ORDER
PHILIP S. LAND, S.J.
and
GEORGE P. KLUBERTANZ, S.J.

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In the nineteenth century a dispute over the methods of ethico-social thinking arose between the abstractionist school of natural law[1] on the one hand and the sociologists Comte and Durkheim on the other. The method of the former was purely deductive.[2] Upon a largely notional basis of definition and deduction, it evolved legal codes as elaborate as they were a prioristic.[3] Such rationalism inevitably provoked reaction,[4] which was largely of a positivist tendency. The chief opponents

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[1]According to this school, "natural law" seems to have meant an objective moral code complete in all details and needing merely to be discovered by the human mind (hence, in itself something like a Platonic Idea). According to St. Thomas, the "natural law" exists only in a mind, though it has a basis in the natures of things (and hence is analogous to an Aristotelian "universal"). Moreover, according to St. Thomas, the natural law is not of itself a complete and completely detailed rule of human action.

[2]See Heinrich A. Rommen, *The Natural Law,* trans. Thomas Hanley, O.S.B. (St. Louis: B. Herder Book Co., 1947), chap. xii, "The Content of the Natural Law."

[3]For a criticism, see Roscoe Pound's introduction to Georges Gurvitch, *Sociology of Law* (New York: Philsophical Lib., 1942).

[4]Simon Deploige, *Le Conflit de la Morale et de la Sociologie* (3d ed.; Paris: Nouvelle Librairie Nationale, 1923). Readers of Deploige will recognize the indebtedness of the authors to this work. (English translation by Reverend Charles C. Miltner, *The Conflict between Ethics and Sociology* [St. Louis: B. Herder Book Co., 1938].)

For a different view on the relations between sociology and philosophy and for a bibliography, see Pitirim A. Sorokin, "Notes on the Interdependence of Philosophy and Sociology," *Revue Internationale de Philosophie,* IV (1950), No. 13, pp. 268-77 and Jean Paumen, "Sociologie et Philosophie. Essai de bibliographie succincte," (*ibid*) pp. 335-40.

of the rationalists were the sociologists, who devoted themselves to gathering sociological facts. In spite of certain obvious defects of the sociologists' methods, Deploige feels able to conclude his penetrating study with this observation:

> The leaders [of the sociological movement] had and keep the praiseworthy ambition of remedying a grave defect in natural law theory. They want to know society as well as possible before prescribing laws for it. Without suspecting it, they have come back to the Thomistic conception.[5]

In spite of statements like this,[6] both Thomistic theory and practice in the field of ethics and the related sciences appear to many Thomists and non-Thomists to be analytico-deductive. We wish to see whether it is or not. We wish to examine first the theory of practical knowledge according to Aristotle and St. Thomas and then a crucial instance of practical reasoning, the vocational order.

I

THE NATURE OF PRACTICAL REASONING IN GENERAL

The subject matter of practical knowledge, according to Aristotle and St. Thomas, is such that we cannot deduce detailed, specific conclusions with certitude.[7] The chief reason for this is that the objects of human action are contingent.[8] It follows that the reasoning about such objects should be affected by a similar contingence; and this contingence appears inasfar as the data of experience and the judg-

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[5]"Ses promoteurs [du mouvement sociologique] ont eu et gardent la louable ambition de réparer une grave lacune du Droit naturel. Ils désirent connaître le mieux possible la société, avant de lui prescrire des règles. Ils sont revenus, sans s'en douter, à la conception Thomiste" (Deploige, *op. cit.*, p. 261).

[6]Deploige thinks that St. Thomas not only laid down the principles of a synthesis between deduction and experience, but achieved it at least to some extent and in major points. He concludes, "La sociologie n'est pas pour le Thomisme une enemie, mais une alliée" (*ibid.*, p. 349).

[7]Aristotle, *Ethics* i, 1094b15-20; St. Thomas Aquinas, "contingentium cognito non potest habere certitudinem veritatis repellentem falsitatem" (*In VI Ethicorum*, lect. 3 [ed. Angelo Pirotta, O.P., revised by R. M. Spiazzi, O.P. (Turin: Marietti, 1949), no. 1152]; cf. *In I Ethic.*, lect. 3 [nos. 32-35]).

[8]Aristotle, *Ethics* iii, 1111b-1112b25; St. Thomas, "Si inquisitio huius scientiae esset ad solam scientiam veritatis, parum esset utilis. Non enim magnum quid est, nec multum pertinens ad perfectionem intellectus, quod aliquis cognoscat variabilem veritatem contingentium operabilium, circa quae est virtus. Et quia ita est, concludit, quod necesse est perscrutari circa operationes nostras, quales sint fiendae" (*In II Ethic.*, lect. 2 [no. 256]).

ments of prudence enter into practical reasoning.[9]

Practical reasoning is very similar to the process of taking counsel, and the two have frequently been compared.[10] Practical reasoning — or the process of taking counsel — has been called by logicians "compositive" (synthetic), as opposed to the "resolutory" (or analytic) types of reasoning.[11] The synthetic process is one of putting elements together, that is, of going from the parts to the whole.[12] As a corroboration of this, we may refer to the statements of St. Thomas that in the practical sciences thought must proceed from the parts to the whole; he exemplifies this by saying that we must first study the family before we study the state.[13]

The nature of practical reasoning can be understood by contrasting it with analytical reasoning. Mathematics, mathematical reasoning, is the best example of analysis. In contrast with mathematics, both metaphysics and moral philosophy must proceed from the things that are most known to us, the sensible things of experience.[14]

A comparison between speculative and practical reasoning not only shows the differences between the two, but suggests that there are different kinds of practical reasoning, proportioned to the complexity of the premises and the nearness with which the conclusions touch upon concrete action.

> Just as every judgment of speculative reason proceeds from a natural knowledge of the first principles, so, too, every judgment of practical reason proceeds from certain naturally known principles, as was said above. But the processes by which we come to judge about different objects are themselves of different kinds. For there are some things in human action which are so evident that

[9]Aristotle, *Ethics* i, 1095a30-b10; *Politics* i. 13, 1260a25; ii, 2-5. Cf. W. L. Newman, *The Politics of Aristotle* (Oxford: Clarendon Press, 1887), II, Appendix A, 388-91; Emile Bréhier, *Histoire de la Philosophie* (Paris: Presses Universitaires, 1938), I. 240, 251. In the *Politics* Aristotle explicitly criticizes Plato for not taking sufficient account of the facts.

See also St. Thomas, *In VI Ethic.*, lect. 9 (nos. 1253-54).

[10]For example, see St. Thomas, *In VI Ethic.*, lect. 4 (nos. 1164-66).

[11]St. Thomas, *In I Ethic.*, lect, 3 (no. 35); *Summa Theologiae* I-II. 14. 5, obj. 1 et ad 1.

[12]"Una quidem [via] per modum resolutionis, secundum quam procedimus a compositis ad simplicia, et a toto ad partem, sicut dicitur in primo Physicorum, quod confusa sunt prius nobis nota. Et in hac via perficitur cognito veritatis, quando pervenitur ad singulas partes distincte cognoscendas. Alia est via compositionis, per quam procedimus a simplicibus ad composita, qua perficitur cognitio veritatis cum pervenitur ad totum" (*In II Metaphysicorum*, lect. 1 [ed. M. R. Cathala, O.P. (Turin: Marietti, 1950), no. 278]). The same definition is to be found in *ST*, I-II. 14. 5.

[13]*In VIII Ethic.*, lect. 12 (no. 1719). Cf. *In Libros Politicorum*, proemium and lect. 1.

[14]*In I Ethic.*, lect. 4 (no. 52).

> with but a modicum of reflection they can immediately be approved or disapproved by means of those common and first principles. But there are others which to be judged need a full consideration of differing circumstances . . .
>
> And so it is clear that moral precepts pertain to good morals; good morals are such as are in harmony with reason; and every judgment of human reason flows in some way from natural reason. Hence, it follows that all moral precepts belong to the law of nature, but in different ways. For there are some that are immediately judged to be done or not to be done by the natural reason of every man . . . Others need a more subtle consideration of reason . . .[15]

According to this analysis, we must distinguish between (*a*) the first principles of the practical order, (*b*) the judgments arrived at by a simple application of these principles to some human actions, and (*c*) the judgments made in dependence upon a full consideration of diverse and changeable circumstances.[16] None of these judgments is arrived at by purely deductive processes. First principles clearly cannot be deduced; otherwise they would be conclusions, not principles. First principles are understood in experience.[17] The second class of judgments may perhaps be said to be deduced, provided we admit that deduction may have a minor premise drawn from experience. Judgments of the third class, which depend on a "full consideration of differing circumstances," evidently are not reached by a purely deductive process, but depend largely upon observational or experiential procedures.

In brief, the theory of practical reasoning according to Aristotle and St. Thomas states that the practical sciences derive their matter from experience. The immediate and simple conclusions are formed by applying the first principles of practical reason to this matter. But other conclusions (both secondary and tertiary) require a repeated and sometimes very lengthy return to experience. These latter conclusions are inductive, not only in their origins but throughout the reasoning process by which they are obtained. In other words, the

[15]*ST*, I-II. 100. 1 (ed. Ottawa, col. 1259).

[16]On this distinction, which is today commonly accepted, cf. St. Thomas, *ST*, I-II, 94. 5, 6; 100. 1, 11.

[17]Though the origin of first principles is still under lively dispute, we are taking the opinion which is held, among many others, by Cajetan, *In II Posteriorum;* D. Cardinal Mercier, *Critériologie générale* (8me ed.; Paris: Alcan, 1923), pp. 305-16; J. de Tonquédec, S.J., *La Critique de la Connaissance* (2me ed.; Paris: Beauchesne, 1929), pp. 247-300; Pierre Hoenen, S.J., "De origine primorum principiorum scientiae," *Gregorianum,* XIV (1933), 153-84; C. Boyer, S.J., *Cursus Philosophicus* (Paris: Desclée, 1936), I, 246-60; E. H. Ziegelmeyer, S.J., "The Discovery of First Principles according to Aristotle," *The Modern Schoolman,* XXII (1945), 137-43.

practical sciences, according to the mind of Aristotle[18] and St. Thomas,[19] must stay close to reality; they cannot indulge in elaborate constructions of ideal situations. Inasmuch as they attempt to forecast, they must be guided by experience even in prediction.

II
PARTICULAR PROBLEMS OF METHODOLOGY IN THE PRACTICAL SCIENCES

THE THINKER AS MAN

Unfortunately, the development of a satisfactory method, and particularly its application, are obstructed by a highly subjective factor.

[18]Some of the more serious instances in which Aristotle fails to practice his own theory are his statements about marriage laws in *Politics* iv. 6; education, *ibid.*, v. 1-3; and his sweeping assertions about legal justice in *Ethics* v. 1. 1130a9-12. But in the main his procedure is in harmony with the theory. For example, he considers the actually existing forms of government as part of his enquiry into the nature of the state (*Politics* vi; ii. 9; iii. 14-17). Again, in deciding the nature and task of justice in a state, he insists that we must look to social conditions as well as virtue (*Politics* iii. 13; cf. Newman, *op. cit.*, II, 187-88, 399). He derives his definition of a citizen by induction (*Politics* iii. 1-2). He believes it important to enter into considerations about the location of a state and the kind of architecture that is needed (*Politics* iv. 11-12). He studies both the sources of decay and the means of preservation of states, not only for the best state, but also for the less perfect forms (*Politics* vii. 5-8). Bréhier sums up the Aristotelian procedure briefly and well. "On voit la méthode: il s'agit non point de fonder une cité mais de trouver, dans les conditions effectivement et historiquement réaliseés, les moyens infiniment divers et changeants selons les circonstances, d'asurer le bien social; pour trouver la meilleure constitution dans un cas donné, il faut même aller jusqu'aux conditions géographiques" (*op. cit.*, I, 253). Cf. Edmond Gaudron, "L'expérience dans la morale aristotelicienne," *Laval Théologique et Philosophique,* III (1947), 242-62.

Of course, all students of Aristotle recognize that he is never satisfied with collecting undigested masses of data; the whole work of gathering information is ultimately for the sake of the insight to be gained and the judgment to be passed. See Bréhier, *op. cit.*, II, p. 251, and Gaudron, *op. cit.*

[19]St. Thomas's own application of his theory of practical reason is not readily discovered, for he has written no formal or independent work dealing with ethical or political questions. The treatise *On Kingship* is an incomplete fragment (cf. the remarks of I. T. Eschmann, O.P., in St. Thomas's *On Kingship,* trans. Gerald B. Phelan, revised with an introduction by I. T. Eschmann, O.P. [Toronto: Pontifical Institute of Mediaeval Studies, 1949], pp. xxii-vi). The work addressed to the Duchess of Brabant *On the Governance of Subjects* is a group of replies to particular questions. The remainder of St. Thomas's ethical and political doctrine is to be found either in commentaries or in strictly theological works. Hence, we have no complete example of how St. Thomas would have carried out his method in practice. But the indications are that his procedures would have been as inductive as those of Aristotle. For example, Book II of the incomplete *On Kingship* deals almost entirely with experiential, historical data. Again, the "non expedit" with which he answers the question, "Should political offices be for sale?" shows a vivid awareness of human motivation (*De Regimine Subditorum ad Ducissam Brabantiae,* ed. John Perrier, O.P. [*Opuscula Omnia,* Paris: Lethielleux, 1949; I, 216-17]).

Temperament and habit enter to incline the intellect to stress one set of principles or facts rather than another. A passion for order and neatness, for instance, in the world of fact as well as of logic[20] can prevent an ethician from acting upon something which he actually knows – namely, that the commensurability (*quod convenit*) which is his stock in trade lies hidden in the complexity (and the consequent obscurity) of the changeable social relationships of men. Such a thinker is unable to operate with the balanced view that Edmund Burke ascribed to an earlier generation of moralists.

> The legislators who framed the ancient republics knew . . . that they had to do with . . . citizens and they were obliged to study the effects of those habits which are communicated by the circumstances of civil life. They were sensible that the operations of this second nature on the first produced a new combination; and thence arose many diversities . . .[21]

We shall come back to the limitations of the thinker as an individual man in a subsequent section on the factors involved in ethical insight.

SECOND NATURE

Burke speaks of the socially modified human nature which confronts the ethician as "second nature" (echoing St. Thomas's expression "habit has the force of nature").[22] This second nature so diversifies first nature that he can speak of peoples as "so many species of animals."[23] Such expressions give no scandal to one who realizes that man (a being constituted by the union of two substantial principles, soul and body)

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[20]Both Aristotle and St. Thomas point out that this is one of the more serious defects in a moral philosopher (*Ethics* i, 1094b20-25; *In I Ethic.*, lect III [Pirotta, 36]). The contrary error (of asserting that moral good and evil are relative to time, place, and person) is more commonly committed, but it is characteristic of a wholly unphilosophical mentality. On this relativism, see Aristotle, *Ethics* ii, 1103a16-b25; St. Thomas, *In II Ethic.*, lect. 1 (Pirotta, 245-54).

[21]*Reflections on the French Revolution.* Quoted by Moorhouse F. X. Millar, S.J., "Edmund Burke and the Moral Foundations of Civil and Political Liberty," *Proceedings of the American Catholic Philosophical Association,* XVI (1940), 160.

[22]Compare this with "common human nature particular to a people, time, and place," Johannes Messner, *Social Ethics, or The Natural Law in the Modern World,* trans. J. J. Doherty (St. Louis: B. Herder Book Co., 1949), p. 172. St. Thomas says that habit "has the force of nature" (*In II Ethic.*, lect. 3 [Pirotta, 265]); cf. *In III Ethic.*, lect. 15 (Pirotta, 549); *ibid.*, I, lect. 3 (Pirotta, 33, 38); *In De Memoria et Reminiscentia,* lect. 6.

Cf. St. Thomas: "Consuetudo autem, et praecipue quae est a puero, vim naturae obtinet: ex quo contingit ut ea quibus a pueritia animus imbuitur, ita firmiter teneat ac si essent naturaliter et per se nota" (*Contra Gentiles* I. 11).

[23]Reference given in n. 21.

lives a physical life in which the formal and actuating principle is ceaselessly actuating the material and potential. There is, accordingly, a variable element in the concrete facts and relationships that are to be ordered to man's end.

The relation of second nature to the first — the influence of social conditions upon the conclusions of the natural law — St. Thomas acknowledges thus: "That which belongs to the natural law is modified according to the different states and conditions of men."[24] To the diversity of states and conditions must be added diversity of times: "The natural law admits of different determinations according to different states; and the positive law is also diversified according to the different conditions of men at different times."[25] Finally, different forms of social and political life must also be considered.[26]

THE CONCRETE SITUATION

Relationships — concrete, social, and consequently complex — are the matter of ethical consideration. St. Thomas points out that "on account of the different conditions of men it happens that some acts are virtuous for some men, being proportioned and suited to them. Yet these acts are vicious for others, not being proportioned."[27] With his usual fine insight, Burke has stated this truth in striking language: "It is the situation in which men stand relatively to one another which produces the rules and principles of that responsibility."[28] Rommen, in a cryptic and easily misunderstood phrase, expresses the same basic truth: "That which is, insofar as it is, ought to be."[29]

The situation in which men stand relatively to one another rather than human nature in the abstract — the relationship in which they concretely exist — establishes many ethical arguments. St. Thomas, for example, argues against divorce from the human need of enduring relationships. Considering the morality of divorce, he says: "It is not

[24]"Diversificantur ea quae sunt de jure naturali secundum diversos status et conditiones hominum" (*In IV Sent.*, 26. 1. 1 ad 3).

[25]"Lex naturalis secundum diversos status recipit determinationes diversas; et ius positivum etiam variatur secundum diversas hominum conditiones in diversis temporibus" (*In IV Sent.*, 26. 1. 1 ad 4).

[26]Cf. "Necesse est quod praecepta legis diversificantur secundum diversos modos communitatum" (*ST*, I-II. 100. 2 [in Deploige, *op. cit.*, p. 305]).

[27]"Propter diversas hominum conditiones contingit quod aliqui actus sunt aliquibus virtuosi, tamquam eis proportionati et convenientes, qui tamen sunt aliis vitiosi, tamquam eis non proportionati" *ST*, I-II. 94. 3 ad 3 (in Deploige, *op. cit.*, p. 303).

[28]Quoted in Moorhouse F. X. Millar, S.J., "Labor and the Common Good," *Labor Law, an Instrument of Social Peace and Progress* (New York: Fordham Univ. Press, 1940), p. 10.

[29]*The Natural Law*, p. 186.

a sufficient answer, if one says that it is an offense [injury] against God. For God is not offended by us, except in this, that we act against our own good."[30]

This truth (which we are belaboring) seems to have been realized better by jurists than ethicians. In the relations in which men stand to one another true law will look for its norm. Thus, the following statements by Dean Roscoe Pound are quoted by Father Millar as a commentary on Burke:

> Where the nineteenth century civilian sought for the will of the parties as deducible from what they did, the common-law lawyer and judge have sought to discover and enforce the duties and liabilities fairly incident to the relations in which the parties find or put themselves. It is not too much to say that this idea of relation is the central one in the common law.[31]

This quotation can also be considered to be an amplification of Pius XI's expression of the underlying idea: ". . . all the institutions of public and social life must be imbued with the spirit of justice, and this justice must above all be truly operative, must build up a juridical and social order . . ."[32] Johannes Messner, in his excellent treatment of the juridic order, aptly speaks of law as "order relative to social life" and as "the outer reflection of the inner order of things," and of the legal code as "the formalization of a given people's definition of the social order."[33]

Our analysis of human nature prepares us to accept variability in the situation in which men stand to one another. There must be no misunderstanding. We are speaking of an objective element, "situational"[34] *de jure* and apart from the arbitrary engagement of human wills. The objectivity of this variability can be more easily seen if we reflect that the inner order of society is the common good as realized. But the common good (a social gain achieved by the complementation and supplementation of individual activity) is, in turn, the work of given men of a given time and place. Further particularizing factors of the social relationships which are an element of the common good

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[30]"Non videtur esse responsio sufficiens, si quis dicat quod facit iniuriam Deo. Non enim Deus a nobis offenditur nisi ex eo quod contra nostrum bonum agimus" *CG*, III. 122 (in Deploige, *op. cit.*, p. 323).

[31]Millar, S.J., *Labor Law*, p. 11. Permission to quote from this book has kindly been granted by the publisher, the Fordham University Press.

[32]*Quadragesimo Anno*, no. 88.

[33]*Social Ethics*, pp. 151, 152, 153, 156, 157.

[34]For a description of the sociologist's use of the word (which is quite like our own), see James H. S. Bossard, *The Sociology of Child Development* (New York: Harper & Bros., 1948), pp. 35-37.

will be the *idée directive*[35] which initiates social activity, the particular "state of the arts" (technological factor), the state of education, and the cultural development. Many more factors could be mentioned, but these serve to make the point.

The ethician should thus be prepared for a shifting proportioning of the common good and a reordering of the relations in which men stand to one another.[36] This changing proportion will also have a dynamic element (a movement of progress as opposed to a mere shifting of respective positions about a given equilibrium). One thinks here immediately of divisions of wealth, property, income, social power, economic power, realistic opportunity for personal development, participation in business enterprise, and so forth.

SOCIAL DETERMINATION

So far our application of St. Thomas's method of "invention and composition" has been made by construing "the situation in which men stand to one another" as *passive*. But there is an active side, too. We can begin by observing that precisely because the social order is an order of men we should rightly expect that the freely participating (and also – rightly understood – contracting) wills may proceed to this ordering along a variety of roads. St. Thomas puts this into its philosophical context when he says: "The end is fixed for man by nature. But the means to the end are not determined for us by nature; they are to be sought out by reason."[37] More concretely, after having spoken of those conclusions of the natural law which are derived by deduction, he says: "But the conclusions which are derived from the law of nature by way of particular determination belong to the civil law, according as every state proportionately determines something for itself."[38] Readers of *Rerum Novarum*[39] and *Quadragesimo Anno*[40] are well aware of the application the modern popes have made of this doctrine to the problem of the content of the right of private property. Thus Pius XI, in the passage noted from *Quadragesimo Anno*, says:

[35]See below, Part III, "Vocational Groups as Institutions."

[36]Messner, *Social Ethics*, p. 128.

[37]"Finis autem determinatus est homini a natura. . . . Ea autem quae sunt ad finem non sunt nobis determinata a natura, sed per rationem investiganda" (*In VI Ethic.*, lect. 2 [ed. Pirotta, 1131]).

[38]"Quae vero derivantur a lege naturae per modum particularis determinationis, pertinent ad ius civile, secundum quod quaelibet civitas aliquid sibi accomodum determinat" (*ST*, I-II. 95. 4). Because the law must be appropriated to a given people, St. Thomas notes (*In V Ethic.*, lect. 12), "juristae . . . nominant ius . . . civile ex causa quod scilicet civitas aliqua sibi constituit" (ed. Pirotta, no. 1017).

[39]Paragraph 7.

[40]Paragraph 49.

> Moreover, Leo XIII had wisely taught that "the defining of private possession has been left by God to man's own industry and to the laws of individual peoples" . . . and this doctrine we ourselves have given utterance to . . . How varied are the forms which the right of property has assumed.[41]

"The situation in which men stand relatively to one another" is also the key idea in St. Thomas's political theory, for his awareness of the need for an experiential starting point leads him to seek out what well-ruled people do and what men of practical wisdom propose.[42] Among the determinants of the ideal state are (*a*) the condition of the people and the objectives sought,[43] (*b*) the virtue of the people,[44] and (*c*) the virtue that can be expected in the available rulers.[45]

St. Thomas's view would not find Montesquieu's realism foreign. In *L'Esprit des lois,* we read:

> The government which is most conformed to nature is that one whose particular disposition is most closely related to the disposition of the people for whom it has been established. . . . Political and civil laws should be so proper to the people for whom they were made, that only by the merest chance could the laws of one people suit another. The laws must be relative to the climate, the terrain, the mode of life of peoples; they must be related to the inclinations of the inhabitants, to their wealth, their morals, their manners.[46]

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[41]*Ibid.*

For Saint Thomas's discussion of property (common by natural law, private by the "law of nations"), see Reverend J. De Concilio, *The Doctrine of Saint Thomas on the Right of Property and Its Use* (New York: Pustet, 1887). See also Reverend William J. MacDonald, *The Social Value of Property According to St. Thomas Aquinas* (Washington: Catholic Univ. of America Press, 1939). The reasons for society's right of determination of the form and content of the right of property are well developed in Jacques le Clercq, *Les droits et devoirs individuels* (Namur: Maison d'Edition Ad. Wesmael-Charlier, 1937), Part II, "Travail, Propriété"; and in Messner, *Social Ethics,* pp. 785-800.

[42]*In II politic.,* lect. 1.

[43]Cf. ". . . oportet in regimine civitatis diversam regionem ordinis observari secundum diversas conditiones eorum qui subiiciuntur regimini et secundum diversa ad quae ordinantur" (*CG,* III. 3 [in Deploige, *op. cit.,* p. 316]).

[44]*ST,* I-II. 97. 1; 105. 1; *De Rege et Regno,* I. 3.

[45]*In III Politic.,* lect. 13; *ST,* I-II. 105. 1 ad 2. (in Deploige, *op. cit.,* p. 305).

[46]"Le gouvernement le plus conforme à la nature est celui dont la disposition particulière se rapporte mieux à la disposition du peuple pour lequel il est établi. . . . Les lois politiques et civiles doivent être tellement propres au peuple pour lequel elles sont faites, que c'est un grand hasard si celles d'une nation peuvent convenir à une autre. Elles doivent être relatives au climat, au terrain, au genre de vie des peuples; se rapporter aux inclinations des habitants, à leurs richesses, à leurs moeurs, à leurs manières" (in Deploige, *op. cit.,* p. 315).

The observations we have made so far really say only what is a matter of common experience. We know that peoples differ – they have developed different practical habits and outlooks (cultural traits). There are nations of seers, nations of bridge builders.[47] Societies, like individuals, are creatures of habits both of thought and of action. Like individuals, societies grow. Accordingly, social order will have time and space dimensions. And the natural law as lived by a people will be bound by time and space.

For this reason, common sense rejects a priori legal codes.[48] Such codes, as we have abundantly seen, are "notional" and not "situational." Hence they tend to be rigid, inflexible.

Ignoring the "situational" character of social order, such a priori codes illegitimately derive generalizations from those particular contingent situations which fit into the lawmaker's conception of how things ought to be. We have plentiful experience of what a powerful instrument such codes can be for the maintenance and sanctification of the *status quo*. Witness only the laws of property and contract derived from the eighteenth-century variety of "natural law." A related conclusion (which has considerable bearing upon the final considerations of this paper) is this: The legal approach and the legal code of one nation must not be presumed to have a necessary applicability to others.

ETHICAL INSIGHT AND EXPERIENCE

By way of summary, we may say that the ethical judgment is for St. Thomas a practical judgment based upon insight into a "situation." Consequently, the proper method of ethical science is that of invention and composition, of a full consideration of varying circumstances.

Four qualities are needed to attain perfect ethical insight. It must be (*a*) based upon reason, (*b*) unhindered by passions; it must be (*c*) mature and (*d*) informed. There should be also a fifth characteristic, namely, that it be dynamic.

Reason, as we have seen, is the rule of human acts.[49] But good will is also involved, for "a perverse reason is not reason, and so the rule

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[47]Cf. Ralph Adams Cram, *The Great Thousand Years* (Boston: Marshall Jones Co., 1919).

[48]To the passages quoted from St. Thomas and Deploige, one might add Messner, *Social Ethics*, Book I, Part III, "Legal Philosophy"; Rommen, *The Natural Law*, chap. xiii, "The Content of the Natural Law"; N. S. Timasheff, "The Sociological Theories of the French Institutionalists," *Thought*, XXI (1946); Luigi Sturzo, *Inner Laws of Society*, trans. Barbara Barclay Carter (New York: Kenedy, 1944), p. 243.

[49]Cf. *ST*, I-II. 90. 1.

of human acts is not just any reason."[50] Moreover, the passions and temperament exert their influence. These influences bring it about that the fundamental ethical drive has a dualistic and dialectical dynamism in society. As Sturzo remarks,[51] both the conservative organizer and the idealistic reformer are prompted by an ethical drive. The "situation" as perceived by the former demands a retention of the *status quo;* as perceived by the latter, it indicates a need for a change.[52] One of the typical, yet frequently unsuspected, defects (as far as social ethics is concerned) is the passion (already noted) for orderliness for its own sake. Yves Simon calls attention to the utopian construction of economic life that appeals to the imaginative, who fancy that disorder can be ruled out from human relations and who thus ignore the

> *pluralistic* conception of social life in which irreducible diversities, lasting antinomies, and difficult processes of adjustment or restoration play considerable roles . . . [and according to which pluralistic conception] harmony [cannot] be established once and for all and definitively by any arrangement of social relations.[53]

Maturity also characterizes the developed ethical insight. Maturity is a matter of growing in age;[54] it is also a matter of growing in wisdom.[55] Very important is the development of judgment, so that innumerable details can be kept in mind at once and correctly evaluated.

The fourth quality of ethical insight is that it be informed, "exercised in the customs of human life."[56] This we have taken to mean "informed about the situation in which men stand relatively to one another." Such informed judgment is had only by the patient and enduring labor of investigation.[57] Deploige, commenting upon the

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[50]*In II Sent.*, 24. 1. 3 ad 3. Quoted in Francis X. Meehan, "Absolute and Relative Moral Order," *Proceedings of the American Catholic Philosophical Association,* XXIII (1947), 71.

[51]"The Influence of Social Facts on Ethical Conceptions, *Thought,* XX (1945), 115.

[52]There is a second dual movement here. The ethician, on the one hand, has his way of looking at the facts. The facts, on the other hand, have a way of positively shaping the attitude of the ethician. Sturzo's article (referred to above, n. 51), is an exceptionally fine probing of this second movement.

[53]"Economic Organization in a Democracy," *Proceedings of the American Catholic Philosophical Association,* XX (1945), 104.

[54]Cf. *In I Ethic.*, lect. 3.

[55]*Ibid.*, and lect. 4.

[56]Cf. "Oportet illum qui sufficiens auditor vult esse moralis scientiae quod sit manu ductus et exercitatus in consuetudinibus humanae vitae" (*In I Ethic.*, lect. 4 [Pirotta, 53], in Deploige, p. 256).

[57]Cf. "Ad hoc quod leges bene ponantur, debet aliquis multo tempore et multis annis considerare" (*In II Politic.*, lect. 5; cf. *ST*, I-II. 100. 1, quoted in section I above).

passages of St. Thomas referred to, and other passages, remarks with discernment that

> the acquisition of this moral science requires — it is not unnecessary to say — a patient effort, an attentive and prolonged observation of the character of men, of customs, of society, of the interplay of laws and of the mechanism of institutions.[58]

Finally, our earlier discussion of the development of the *content* of natural law will prepare us to appreciate the fact that social insight (being the active cause of the developing content) itself develops. This seems to be the sense of the following statements of St. Thomas.

> It seems to be natural to human reason to develop slowly from the imperfect to the perfect . . . For the first men, who intended to discover something useful for the human community, being unable themselves to consider everything, instituted some things which were imperfect and deficient in many points. But later generations changed these institutions, setting up new institutions which could fail in fewer points from the common weal.[59]

Based on a heritage of past insight, succeeding generations of men more easily penetrate into the commensurateness of complex social relationships. The grounds of reason already conquered become a plateau from which new ethical views can be gained.

III

THE VOCATIONAL ORDER
INTRODUCTION

In our study of the method of ethical science, we have referred to two applications of that method. These were concerned with solving the problems of private property and the state. Because they have been explored by others, we choose to give more detailed attention to a different problem in the application of the natural law to the social life,[60] the vocational group. The question of the vocational order — in

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[58]"L'Acquisition de cette science morale exigera — il n'est superflu de le remarquer — un effort patient, une observation attentive et prolongée du caractère des hommes, des moeurs, de la société, du jeu des lois, du mécanisme des institutions" (*op. cit.*, p. 256).

[59]"Humanae rationi naturale esse videtur ut gradatim ab imperfecto ad perfectum perveniat. . . . Primi qui intenderunt invenire aliquid utile communitati hominum, non valentes omnia ex seipsis considerare, instituerunt quaedam imperfecta in multis deficientia; quae posteriores mutaverunt instituentes aliqua quae in paucioribus deficere possunt a communi utilitate" (*ST*, I-II. 97. 1).

[60]For a fruitful and stimulating discussion of the application of natural law to this problem in the modern international community, see Luigi Sturzo, "The Influence of Social Facts on Ethical Conceptions," cited above, n. 51.

its ethical as well as its socio-economic aspects — is surely one that merits study on the part of philosophers. Much current writing on the subject, we believe, reveals serious weaknesses in the points discussed in the foregoing study. To justify the comments we felt ought to be made about such writings, this lengthy preface was necessary, and so, too, the rather extended discussion which follows.

The *locus classicus* for any discussion of the vocational order is Pius XI's encyclical letter, *Quadragesimo Anno* (sections 76-88). From it we take the general statement of the nature of these groups.

> But there cannot be any question of a perfect cure, except this opposition [between the two warring camps of capital and labor] be done away with, and well-ordered members of the social body come into being anew, vocational groups, namely, binding men together not according to the position they occupy in the labor market, but according to the diverse functions which they exercise in society.[61]

This vocational ordering of economic activity is in some sense dictated by natural law. Thus, in the same passage, Pius XI continues:

> For as nature induces those who dwell in close proximity to unite into municipalities, so those who practice the same trade or profession, economic or otherwise, combine into vocational groups. These groups, in a true sense autonomous, are considered by many to be, if not essential to civil society, at least its natural and spontaneous development.

It is possible to make out a good case for the naturalness of the vocational ordering of economic life "in some form," or "as a generic type."[62] Generally, however, when the vocational order is proposed to us for moral acceptance it is presented as embodied in a concrete form and a fairly specific type. Either a set of functions or a set of structures or both are presented. This, of course, is not wrong, for it is idle to talk about economic society in the clouds.

But, on the other hand, one seriously asks whether the natural law really obliges us to embrace the elaborate system presented by any author. He may have explicitly disavowed all intentions of returning to "guildism." But what he offers very often looks just like a medieval guild. Or, he renounces "blueprinting"; actually, he seems to have omitted merely the name and a few of the details of a blueprint.

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[61]No. 83.

[62]James J. Berna, S.J., "An Inquiry into the Sense in Which Vocational Groups May Be Said to be Natural" (Saint Louis University, unpublished Master's thesis, 1947).

The bulk of the literature on social order, in a word, is highly a prioristic and fails to conform to the cardinal principles of Thomistic practical science. To avoid a lengthy survey of books and articles, we shall present a sorites which succinctly reproduces the approach of such writers on social order. If the deduction appears to be spelled out at undue length, it is only because a "notion" admits of such logical treatment.

a) The end of economics (the sorites begins) is social, and man's nature is social.

Therefore men have both a responsibility to the common economic good and a right to exercise that responsibility.

b) But the most natural form of this co-operation is by association within a group producing a particular good or service.

Therefore occupational associations should be formed.

c) But occupational societies form true corporate societies.[63]

Therefore the state must recognize the juridically possessed authority of the group for purposes of self-government. Such recognition establishes public-legal bodies.

d) But such bodies exercise within their authority functions of legislation, judicial review, execution, and sanction.

Therefore the occupational groups will exercise such powers.

e) But the proper function of these occupational societies is the ordering of the whole of economic activity.

Therefore the whole of economic activity must be subjected to legislative controls, and so forth.

f) But economic activity includes products, output, prices, rates of technological development, planned use of resources, and so forth.

Therefore all these must be legislated by the occupational groups.

g) But each occupational group has different levels of occupational interest, local, regional, and national.

Therefore each occupational group must be organized vertically as well as horizontally.

h) But (1) the hierarchy of structures within each vocation has interests conflicting with those of other groups; and (2) the complexity of the economy, as well as its national goals, demands the co-ordination and planning of the whole of the activity of the various groups.

Therefore the hierarchy of corporate bodies must include a vertical union of these public-legal bodies at local, regional, and national levels — each acting with delegated authority through representation from the lower orders to

[63] An alternative (or concomitant) form of step three argues from the need for authority to co-ordinate activity so as to achieve the common good. This argument, good in itself, can receive an a prioristic treatment. The functional character of authority is ignored (and, consequently, also its pluralistic nature), and the subsequent steps are thence derived as in the text above.

> legislate the general principles of conduct, of production and prices, and of the plan of economic development.

Authors who bring off such a tour de force feel, it must be realized, that they are only developing the implications of man's social nature and the end of economy. They might appeal to this statement of St. Thomas:

> Whatever has a determinate nature must have determinate actions becoming to that nature, since the proper operation of a thing is consequent upon its nature. Therefore, there must needs be certain actions that are in themselves becoming to man.[64]

It is true, as we have seen, that for St. Thomas there are two ways of deriving something from the natural law ("one way, like conclusions from principles, the other, like certain determinations of common principles"[65]); and it is quite as clear that the sorites, while using the first way, does not effectively use the second. The deduction would need to be completed at several points by empirical evidence to justify the *implications* presumed to be found in social nature. The rest of this paper will set forth some of the social and economic considerations that the deductive argumentation ignores.

VOCATIONAL GROUPS AS INSTITUTIONS

A fruitful beginning in any discussion of the organization of occupational societies is the realization that a vocational group is an *institution.* By way of a preliminary remark, we may note that the description of the "new order" in *Quadragesimo Anno* is in terms of the institution: ". . . the highly developed social life which once flourished in a variety of prosperous institutions . . . [is to be re-established by imbuing] all the institutions of public and social life with the spirit of justice . . ."[66]

What is an institution? An institution is often defined in the widest sense as "a commonly accepted mode of doing something"; this mode of activity has also a certain "momentum"—it is not merely ephemeral.

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[64]"Quorumcumque est natura determinata, oportet esse operationes determinatas, quae illi naturae conveniant. Propria enim operatio uniuscuiusque naturam ipsius sequitur. Constat autem hominum naturam esse determinatam. Oportet igitur esse aliquas operationes secundum se homini convenientes" (*CG,* III. 129 [translation by Rommen, in *The Natural Law,* p. 221, n. 8]).

[65]"Uno modo sicut conclusiones ex principiis; alio modo sicut determinationes quaedam aliquorum communium" (*ST,* I-II. 95. 2). Cf. Deploige, *op. cit.,* p. 310. He says explicitly, "The double procedure is in all law."

[66]No. 83.

In the stricter sense, an institution is such a "commonly accepted mode of doing something" as is protected and to some extent carried on by a specific social structure or organization. We can also look at institutions genetically, in their appearance and growth among men. If we prescind from the natural-law basis of those institutions that are *natural* societies, we are safe in adopting (and adapting to our purpose) the definition of Maurice Hauriou. According to the eminent French Catholic jurist, an institution is

> an idea of an undertaking or enterprise which is realized and endures juridically in a social milieu. For the realisation of this idea a power is organized which procures organs for it. On the other hand, among the members of the social groups interested in the realization of the idea are produced manifestations of intercommunion directed by the organs of power and regulated by methods of procedures.[67]

N. S. Timasheff observes that the institutionalists, in their attempt to discover the reality of social groups, found the key and basis of the group in an organizing or directive idea. He expresses their thought in this way: "The presence of such an idea is an observable fact, not a mental construct, and this is really what holds men together forming a social group."[68] This analysis is strikingly similar to the statement of St. Augustine that the unity of a group is in their "common agreement as to the object of their love."[69]

Analyzed structurally, the institution appears to be made up of three elements. They are (*a*) the *idée directive,* (*b*) an organization to achieve the idea, and (*c*) a resulting intercommunion of men in social

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[67]Moorhouse F. X. Millar, S.J., "The French Theory of the Institution, Suarez, and the American Constitution," *Proceedings of the American Catholic Philosophical Association,* VII (1931), 170. For an interesting historical application of Hauriou's theory see *Melanges Maurice Hauriou,* "Quelques remarques sur la Théorie de 'l'institution' et le caractère institutionnel de la Monarchie capetienne," par J. Declareuil (Paris: Librarie du Recueil Sirey, 1929).

Both Millar and Timasheff (see the following footnote) point out for us that most of the French institutionalists did not escape a certain positivism. That is why we speak of *adaptation.* We must make our own synthesis of their genetic, sociological approach to the institution with the requirements of a philosophy of objective natural law. Not social acceptance, but essential ends of man's nature account *essentially* for such institutions as the state, the family, and — in lesser measure — the vocational group.

Something of our approach, we believe, is implicit in the treatment of collective bargaining, the strike, and the labor union, by M. Paul Cuche, "Manifestations nouvelles d'Autorité dans la vie sociale par le development de l'institution," *Semaines Sociales de France* (XVII session, Lyons, 1925 [Paris: Gabalda]).

[68]"The Sociological Theories of the French Institutionalists," *Thought,* XXI (1946), 495. It will be noted that we are concerned only with "Person-Institutions," or social groupings, not with "Thing-Institutions," or social habits, and so forth.

[69]Cf. Millar, *op. cit.,* p. 170.

solidarity. More could be said about the structural analysis of the institution as a social group,[70] but this suffices for our purpose. We can now go on to point out the variable element in the institution.

We should like to show that this variability attaches both to the "directive idea" and to the functions and structures which embody the idea. What is meant by a "directive idea"? Take any "idea of an undertaking." Such an idea will have a generic aspect — that is to say, all peoples will experience somewhat the same relation to a need. The more natural this need, the more alike this relation will be. (Such relations seem to be the basis of the *jus gentium.*[71]) As social intercourse develops successive approximations to the same basic idea, the apprehensions diverge. Take, for example, the idea of national economic enterprise. Essentially (and shorn of all errors — individualist, socialist, and so forth), the idea will be expressed in terms of providing enduring accessibility for all to the means of livelihood. Now, even without going on to the further question of how the economy is to be concretely organized, we find considerable variation in the *idea* of organizing it. Economic activity historically has been construed by some as a religious vocation.[72] Others have seen in it an exercise of neighborliness or of brotherhood or of some other principle of association. For these, the concepts of mutuality and reciprocity have shaped the radical idea.[73] Finally, a more individualistic people can, without falling into any reprehensible individualism, conceive economic activity as commercial exchange.

Part of what is involved is a legitimate decision of the social group as to how they shall order the secondary ends of economy and what stress shall be given to one or the other. This is particularly true of cultural ends, as can be seen from the examples given.

The second step in the discussion is the consideration of the variability of an institution arising from its organizational side. Of course, the directive idea exercises great control over the shaping of the functions and structures of the concrete institution as a "going

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[70]Further development of this analysis would show that the vocational group is a "functional organization" rather than a "formal community." Certainly it is not a mere association. For definitions of these terms, see Franz Mueller, "On Some Basic Patterns of Interhuman Behavior," *The American Catholic Sociological Review,* VI (1945).

[71]Messner, *op. cit.,* pp. 202 ff.

[72]Cf. Max Weber, *The Protestant Ethic and the Spirit of Capitalism,* trans. Talcott Parsons (London: Allen and Unwin, 1930); Amintare Fanfani, *Catholicism, Protestantism and Capitalism* (New York: Sheed & Ward, 1935).

[73]Cf. Karl Polanyi, *The Great Transformation* (New York: Rinehart, 1944).

concern."[74] But this control is not so great that there is no room left for variability in the organized structure – whether the problem of organization be considered as one of setting up an authority to procure organs for the realization of the idea or as one of appropriate functions and supporting structures.

An example will make this variability clear. In property we have an institution whose *raison d'être* is the orderly use of created visible nature. But the institutionalizing of the idea of a *proprium* may be expressed variously for various reasons. One society may stress one title of acquisition; another, another. Various forms of inheritance make property holding significantly different: for example, primogeniture *versus* equal division among heirs. The objects to be considered "proper" may be more extensive for one people than another. The amount of property to be owned by a single individual will be defined differently by a "distributist minded" society and by a feudal society. Within the limits of the same principle of subsidiarity, the domain of private and the domain of public will be defined differently by different peoples.

LEGAL IMPOSITION *VERSUS* FREE DETERMINATION

Here, where we are concerned with societal determination of functions and structures (alternatively, of the organization of power), the battle between the a priori and the contingent real is sharpest. Sturzo, with his usual sense of the real, states that "the institution is simply an *a posteriori*, the outcome of experience, both in its objective structure and in all its variations."[75] This position has recently been given apt expression by an American sociologist, Gerard de Gre. He says:

> The efficacy and operation of institutions, as well as their origins, rests ultimately with the groups which establish them and carry them out in their social behavior. Social institutions are patterns of social action which arises out of group life . . . and which crystallize the dominant ideas of the community. Institutions, therefore, are dependent upon the probability that certain established

[74]Messner, *Social Ethics*, p. 180, says: "As society develops these ends and functions tend to promote the formation of social organizations about them." For a treatment of the institution as a "going concern," see John R. Commons, *Legal Foundations of Capitalism* (New York: Macmillan Co., 1924) and *Institutional Economics* (New York: Macmillan Co., 1934).

[75]Sturzo, *Inner Laws of Society*, p. 245.

When a government tries to create social structures where not even their elements pre-exist, its procedure is necessarily a priori. Hence, most institutionalists oppose creations of institutions by legal fiat; cf. Sturzo, *ibid.*, and Timasheff, "The Sociological Theories of the French Institutionalists," *Thought*, XXI (1946), 507.

> forms of social interaction are present . . . within and between groups.[76]

Such expressions may well be considered as echoes across the centuries of St. Thomas's statements. "It is necessary that the precepts of the law be diversified according to the different kinds of communities."[77] "The objects of justice which have been determined by men are not the same everywhere . . . The reason for this is that political communities are not the same everywhere."[78] The basic reason for such variations, according to St. Thomas, always is that "the rightness of a law is expressed in relation to the common utility, to which one and the same thing is not always suited."[79]

Suarez, too, had the same social approach to the institution. Sturzo cites his treatment of international society in testimony, saying Suarez maintained that

> . . . the medieval empire had fulfilled its function and is no longer tenable, especially since Christendom has been broken up and every kingdom claims autonomy. He, therefore, maintains the empire of an international law, regulating the relations between sovereign states.[80]

IV
SOCIAL CRITERIA FOR VOCATIONAL ORDER

This inquiry into the nature of the institution may seem to have been drawn out to undue length. The time given to the inquiry, however, will enable us to treat more briefly the proper social criteria for judging proposed reorganization according to vocational grouping. A true *ars politica socialis*,[81] it would appear, will judge the elabora-

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[76]Gerard de Gre, "Freedom and Social Structure," *American Sociological Review*, XI (1946), 531.

See also, for example, Joseph Zamanski, "Structure de l'Autorité corporative," *Semaines Sociales de Frances* (Angers, 1935), pp. 343 ff., and 348; M. Roger Grand, "L'Organisation du régime corporatif dans l'agriculture," *ibid.*, p. 429.

[77]"Necesse est quod praecepta legis diversificantur secundum diversos modos communitatum" (*ST*, I-II. 100. 2).

[78]". . . justa . . . per homines posita non sunt eadem ubique . . . Huius ratio est quia non est eadem ubique urbanitas sive politia" (*In V Ethic.*, lect. 12. [in Deploige, *op. cit.*, p. 315]).

[79]"Rectitudo legis dicitur in ordine ad utilitatem communem, cui non semper proportionatur una eademque res" (*ST*, I-II. 97. 1 ad 3 [in Deploige, *op. cit.*, p. 314]).

[80]*Church and State* (New York: Longmans, Green & Co., 1940), p. 249; passage quoted and commented on by Moorhouse F. X. Millar, S.J., in his review of this work (*Thought*, XV [1940], 641-64). Permission to quote from this book has kindly been granted by the British publisher, Geoffrey Bles, Ltd., London.

[81]Cf. *Quadragesimo Anno*, no. 82.

tions of functions and structures by the standards of consistency, feasibility, and economic rationality.

CONSISTENCY

By "consistency" is meant a harmony between the structuring given to man's economic activity and the conclusions of an adequate philosophy of human nature and human action. This philosophy, it will be admitted by the followers of Aristotle and St. Thomas, establishes an end for economic activity, a hierarchy of economic subjects, a principle of subsidiary relation among economic bodies, a pluralist conception of the common good, and so forth. According to this criterion, all forms of the corporate state are defective, as are, to a lesser extent, strongly authoritarian economic organizations. Deficient also are such forms of a priori planning as tend to destroy legitimate and necessary individual enterprise, individual exercise of personal responsibility, and the expression of the individual personality.

The errors of state corporatism (or of universalism) are not our concern here; they have been sufficiently exposed by others. But a priori planning (though the term is indignantly repudiated) is plentifully in evidence. When we apply the criterion of consistency to such planning, serious misgivings arise.[82] Despite assurances to the contrary, the individual person seems in proximate danger of being swallowed up, not indeed by the state, but by the pluralist group action which the planners propose for us. This criticism can be expressed in another form. Social thinkers (especially Catholics) rightly like to apply the organic analogy to the vocational order. But let it remain an *analogy!* Men organized in a vocational group are not a real organism. Human persons are not cells proliferating in an organic body that absorbs individual entelechy, individual activity; they are distinctly existing substantial beings, each capable of attaining the ultimate end, each personally responsible in his human activity.

FEASIBILITY

Feasibility — operational and administrative — is a question of what is socially and politically possible.[83] This practical possibility in turn

[82]The writers hope their emphasis of this aspect does not suggest that they are unmitigated individualists. But whether they incorrectly apply their own criteria or not, the criteria themselves are valid.

[83]This criterion is superficially similar to the pragmatist (or instrumentalist) criterion of good and evil. But note a profound difference. Pragmatism (and allied theories) judges *ends* by their practicality, their results, their satisfyingness. Feasibility is a criterion of *means*. For example, we do *not* say that social justice is good because it works — social justice is demanded by man's nature. But once this end is established, we must decide how best to achieve it, that is, most successfully under present circumstances.

depends on social development. It is clear that individual understanding and good will are involved in this development. The planner must be able to answer questions such as, Are people prepared to go so far? Are they prepared to go in this particular way? The personal aspect of feasibility is easily understood and needs no further discussion. "Structural feasibility" is more of a problem.

The suitability of an institution is bound to space and time. What is useful, necessary, or efficacious for one country at one time cannot *eo ipso* be said to be such for other countries and other times. The essential values are the same — social justice; a correct ordering of ends, economic and social; a social philosophy of labor; subsidiarity, and so forth — but all of these values, and particularly occupational association, can take more than one form.

It is possible, moreover, that an "idea" can be embodied in simpler or more complicated structures. The degree of complication is determined by the homogeneity of the people in nationality, religion, class structure, language, education, political convictions, income distribution, and past and present cultural level. Again, the developed cultural traits of a people may be for or against the multiplication of elaborate structures for integrating group effort. Experiencing the failure of sophisticated organization may make the people of a country more cautious, more inclined to simpler models.

Even if we confine our discussion to one given people, institutional structure is still variable. Once the contingencies of human nature, human knowledge, and human activity have been granted, we must recognize that institutions, far from being able to be entirely blueprinted, can arise only through gradual development. Messner's observations on this aspect of the institution are excellent. He writes:

> Social criticism must be realistically-minded. It must bear in mind the fact that any particular social order with its complex institutions, and principles is the product of historical processes and that it cannot be simply exchanged for new ones like cast-off garments.[84] Thus the first task of social reform is to discriminate, to remove only what is functioning badly, and to conserve and strengthen what is functioning well.[85]

Perhaps most pertinent to the present argument is the following quotation:

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[84]*Social Ethics,* p. 263. See the whole of Book I, Part IV, "The Social Question." (Permission to quote from this book has kindly been granted by the publisher, the B. Herder Book Co.)

[85]*Ibid.,* p. 266.

> The common good is a continuous process of assimilation of new driving forces and adaptation to new needs. Both of these, forces and needs, are fully operative in integrating the social good only in so far as they can act in self-determination. For they are correlative with purposes, interests, desires, and with the productive and creative impetus which these provide. . . .[86]

In the light of these principles of sociology we are in a position to appreciate the wisdom of the several passages in which Pius XI has testified to the importance of the social aspect of this natural-law institution. In *Quadragesimo Anno* we read:

> We are content, therefore, to emphasize this one point: not only is man free to institute these unions which are of a private character, but he has a right "further to adopt such organizations and such rules as may best conduce to the attainment of their respective objects." The same liberty must be claimed for the founding of associations which go beyond the bounds of a single trade. Let those free associations which already flourish . . . make it the goal of their endeavours . . . to prepare the way and to do their part towards the realization of that ideal type of vocational group which we have mentioned above.[87] It is hardly necessary to note that what Leo XIII taught concerning the form of political government can, in due measure, be applied also to vocational groups. Here, too, men may choose whatever form they please, provided that both justice and the common good be taken into account.[88]

Finally, in *Divini Redemptoris,* Pius, returning to the vocational order, insists upon working together "to effect, *under forms adapted to different places and circumstances,* what has been called the Corporation."[89]

ECONOMIC RATIONALITY

The third criterion bearing upon socio-economic reform is that of economic rationality. "Intelligent procedure begins with understanding the situation which is proposed for change, including the possibilities, methods, and probable costs of change."[90] Catholics sometimes

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[86]*Ibid.,* p. 267.
[87]No. 87.
[88]*Ibid.*
[89]*Divini Redemptoris,* no. 54.
[90]Frank Knight, in the discussion of the paper "Some Criteria of Social Economy," by Raymond T. Bye, *American Economic Review,* Supplement, Vol. XXXIV (1944).

believe that the indifference with which professional economists meet their proposals of reform stem from bias. In a very great number of cases this is certainly not so. What has happened is that the economist has been alienated by what he must inevitably consider sheer utopianism, since it is not accompanied by any reputable economic analysis.[91]

Actually the economist may be quite as convinced as the Catholic that a pure market economy produces all the evils of a market society and accordingly be sympathetic toward the objective of imposing some social controls upon the market. Economic sense, though, makes him wary of such controls as would hamstring production, for this, he recognizes, is the road to disillusionment. A nation's welfare is of course not purely economic. But by the same token welfare rests to some extent upon a nation's material substratum of wealth. The economist argues this truth concretely: "You must have wealth before you can talk about sharing it."[92] We have seen reformers so concerned about the division of wealth that they failed to provide the energy and incentive needed to produce the goods to be divided. If the wealth to be shared is too small, the most equitable division cannot bring satisfaction.

Another aspect of economic organization concerns not so much production and distribution as the work relationship. We need not here describe the unsatisfactory conditions of industrial life, its failures to satisfy the goals of the worker, its inability to provide for the nonpecuniary goals of labor. And we need not digress upon the possible exaggeration of the extent of this pathological condition of American industry. Abstracting from these questions, the economist has a practical question: Will the efforts to "structure" the worker properly in his work still permit the work to be done? Many professional economists are aware of the social maladies of our economic system and want effective action to change the situation. Moreover, they know that a satisfactory work relationship itself makes for increased production. But they do not forget that organizations have sometimes been so elaborate that production fell below subsistence levels.

Hence, the economist wants to know this: Will the social planner's scheme help to produce more and better goods, in a better way, with better distribution? How much more? How much better? His very

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[91]Joseph A. Schumpeter, "L'entreprise privée devant les tendences socialistes modernes," *Relations,* No. 62 (Montreal: Feb. 1946), pp. 39 ff.

[92]Pius XII, letter to M. Charles Flory, president of the Semaines Sociales du France July 19, 1947; in *Catholic Mind* (Nov., 1947). The pope returns to the theme in his address to the Fribourg Union and the Saint Gall Unions, Rome, June 3, 1950; address printed in *Catholic Mind* (Aug., 1950).

profession of *economy* makes the economist distrustful of elaborate schemes that have not been tested by any approved measurement of performance.

The question must be framed in a broader way. What will the new plan bring us? And what will it cost us (who must pay)? In answering the first question, the planner will be allowed an alternative. He may prove that this proposal will yield either a bigger national income or a more stable one (which comes to the same thing); or, if it will not provide a bigger national dividend, it is because the new program will bring us something better, for the sake of which we should readily sacrifice something of goods and services.[93] But any combination of economic and noneconomic goals must itself meet the economic test of cost.

However, before one even approaches the question of the satisfactory measurement of costs, one has to be sure that there are no hidden illicit assumptions. Two questions are in order. First, is the planner measuring present (admittedly unsatisfactory) performance records against an unwarranted presumption of high performance levels to be gained by the change? Possibly we are being asked to buy "a pig in a poke."[94] The second question is, Is the planner not perhaps assuming that, whereas in his judgment the existing system is marred by more social evils than goods, his plan will have no social costs?

Unsuspected and serious social costs lie hidden in the price determination proposed by many advocates of the vocational order. This comment may sound like the special pleading of laissez-faire individualism. Nevertheless, we believe that it expresses only the prudent misgivings of those economists who, while fully aware of the need of social *principles* to determine the framework within which prices move, are quite as aware of the necessity of permitting prices to carry out their socially necessary function. This function demands relatively free movement of prices.[95]

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[93]Cf. John M. Clark, *Alternatives to Serfdom* (New York: Alfred A. Knopf, 1948), chap. i, "A Balanced Society," and chap. iii, "Competition and Security." These two chapters are a model of well-balanced "packaging" of economic and noneconomic goals.

[94]"A pig in a poke" is what the laissez-faire reformist also offers us, when he proposes the Elysian fields of pure and perfect competition.

[95]The pricing function is allocation of resources. Two reciprocal terms are joined by price: the needs of men to be satisfied and the means (resources) of satisfying them. The pricing mechanism operates to maximize in the face of scarcity by (*a*) determining relative values of one good in terms of others, (*b*) shifting resources as relative values (that is, demands) dictate, (*c*) rationing a scarce resource relative to wide demand, (*d*) promoting efficiency, and (*e*) acting as a partial principle of distribution of income (economic measurement of social performance).

Three sets of pertinent questions are involved. They concern (*a*) function, (*b*) implicit economics, and (*c*) competition.

The first question concerns the *functions* of price. Will the regulation of prices aid resource allocation?[96] Or will it perpetuate rigidity of the economy and close off opportunity for the dynamic leaders the country needs? Is price regulation presumed to be capable of maintaining full employment?

Concerning *implicit economics* there are many questions. Is it possible to separate quota regulation from price regulation? Will not technological development or even capital development be curbed? Maintaining high prices may protect high-cost (and therefore presumably undesirable) producers. How is this eventuality avoided?

How will price regulation by occupational groups avoid the spiral of inflation? Can we presume that the checks are sufficient to prevent individual producer groups from voting themselves repeated price increases?[97] If workers within an occupational group demand increased wages, will managers yield and pass the increase on to the consumers? What prevents "deals" between workers and owners or among owners (approved by workers because they also profit)? How do vocational groups prevent subsidization of moribund industries instead of transferring workers, capital, and resources to growing industries? Is it not overly optimistic to think — in the light of Interstate Commerce experience, for instance — that public representatives can make out a cogent case against socially harmful moves and win their point?

Finally, concerning the place of *competition,* two further questions must be raised. How, in the concrete, does price regulation provide

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Two further notes must be made on the above. First a workable competitive movement of price can be had without going back to *laissez faire.* What is crucial is the presence of significant rivalry permitting real options on both sides of the market. This in turn requires freedom to enter the market to make a better offer and easy access of the buyer to the better offer. Secondly, "most economists . . . recognize that competition alone is not sufficient to keep production and employment at high levels . . ." (Corwin Edwards, *Maintaining Competition* [New York: McGraw-Hill, 1949], p. 8). J. M. Clark agrees with Mr. Edwards: "What seems needed is a combined program, in which various kinds of private and public arrangements for stabilizing demand are facilitated by price flexibility, and in which these arrangements serve in turn to make price flexibility safer for the economy . . ." (*Guideposts in Time of Change* [New York: Harper & Bros., 1949], p. 139).

[96]For the economic interpretation of the following questions, see the preceding footnote. See also Messner, *Social Ethics,* pp. 866 ff.

[97]The forcible imposition of vocational groups will not automatically remove selfishness and short-sightedness. To think otherwise is to indulge in the same fallacy which the Communists use: "Destroy the profit motive and all injustice will cease."

any room for the social values of competition? And how does it assure real alternatives to users and consumers? In each of these areas, how do the planners assess experiences like the National Recovery Act, British business, and European cartels?

V
CONCLUSIONS

It can be seen that our treatment of socio-economic reform has not been negative and that the conclusions we draw are not merely to let social problems work themselves out. This can be seen if we review the course of the argument. The first premise was that practical knowledge cannot be purely intuitive, deductive, or analytic. True, the nature of man can be found by a reflective inspection and analysis of his activities, culminating in an intellectual insight that man is a rational animal, a being composed of body and soul. By an examination of man's nature and activities, the *essential ends* of that activity can be found. From them the primary precepts of the natural law are deduced. But tertiary principles are known neither by a simple inspection nor by analysis nor by deduction; they can be arrived at only by a full consideration of varying, contingent circumstances. In the field of social and economic activities, the social thinker must therefore take account of his own limitations as a man, second nature, the concrete situation, and social determinations; he must develop his ethical insight by his own experience and that of the race.

The second premise concerns the nature of the vocational order. If the vocational order were a logico-mathematical or legal entity, it could be developed according to the laws of logical deduction from an abstract concept. But since a vocational group is a social institution, it follows the laws of social growth. Social institutions are not the essential ends of human activity; they are rather historically determined means of attaining those ends.

Of the conclusions that could be drawn from the premises there are two we wish to emphasize. The first is that it is right to insist that there should be careful and honest assessment of the known good against an unknown good, of the known costs associated with the present system as against the unknown costs of proposed changes. We suggest, too, that change should move along known routes of behavior and within known possibilities of absorption of change.

The second major conclusion concerns the moral obligation of supporting socio-economic reform along vocational lines. There is an obligation, we believe, to embrace only what can be shown to be a

reasonable program for a particular nation at a specific time. In this connection, we wish to point out that progress has been made in the United States in the last two generations; and we wish to suggest that practical social planning will be most successful if it aims at the immediately possible improvement of existing, if inchoate, institutions.[98] This procedure may involve sacrifice of symmetry and order. But *ars socialis,* it may be recalled, is not *ars logica* or *dialectica.*

[98]As far as the improvement in practice is concerned, it is sufficient to mention the improvement in labor relations, the construction of model labor contracts, social security, co-operatives, the participation of employees in company ownership, profit-sharing plans. On this last, see Leo C. Brown, S.J., "Profit Sharing Pays," *Social Order,* I (1951), 64-74.

Economic theory has also made great progress. See Bernard W. Dempsey, S.J., "The Roots of Business Responsibility," *Harvard Business Review,* XXVII (1949), 393-404, and the two studies referred to in that article — Donald K. David, "Business Responsibilities in an Uncertain World," *Harvard Business Review,* XXVII Supplement (1949); John M. Clark, *Alternative to Serfdom* (New York: Alfred A. Knopf, 1948). See also Russel W. Davenport, "The Greatest Opportunity on Earth," *Fortune* (Oct., 1949).

A valuable account of the new Dutch movement toward employee participation in management, the "Plant Council," can be found in Peter de Bruin, S.J., "Toward Economic Order," *Social Order,* I (1951), 54-64.

EMPIRICISM AND APPLIED MATHEMATICS IN THE NATURAL PHILOSOPHY OF WHITEHEAD

THOMAS A. O'KEEFE, S.J.

This paper is a chapter from my study of Professor Whitehead's metaphysical theory.[1] The aim here is *a*) to make manifest the thorough-going empiricism professed by Whitehead with regard to our knowledge of the external world of nature; and *b*) to briefly describe and estimate the success of his attempt to solve the problem of applying the exact science of mathematics to such an empiricist world. We are thereby helped to understand what he must conceive to be the relation of metaphysical judgments to the world of nature. The immediate investigation is purposely confined to one book, and that a comparatively early one, *The Concept of Nature*. Nevertheless, for a reason to be indicated later, this restriction in no way limits the conclusion.

I. INTELLECTUAL KNOWLEDGE OF NATURE

The Concept of Nature is Whitehead's philosophy of natural science. He defines nature as "that which we observe in perception through the senses."[2] "The primary task of a philosophy of natural science," he declares,

> is to elucidate the concept of nature, considered as one complex fact for knowledge, to exhibit the fundamental entities and the fundamental relations between entities

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[1] "The Actual Entity and the Concept of Substance in the Philosophy of Alfred North Whitehead" (a doctoral thesis submitted at the Gregorian University, Rome, in April, 1950).

[2] Alfred North Whitehead, *The Concept of Nature, Tarner Lectures Delivered in Trinity College, November, 1919* (Cambridge: Univ. Press, 1930), p. 3. Permission to quote from this book has kindly been granted by the publisher.

> in terms of which all the laws of nature have to be stated, and to secure that the entities and relations thus exhibited are adequate for the expression of all the relations between entities which occur in nature.[3]

From the philosophy of natural science he positively excludes all formal discussion of knowledge theory. "That problem [of natural philosophy] is to discuss the relations *inter se* of things known, abstracted from the bare fact that they are known."[4] ". . . any metaphysical interpretation is an illegitimate importation into the philosophy of natural science."[5] However, the construction of a philosophy of science is obviously an intellectual undertaking, in which the philosopher must actually employ some theory of knowledge; it is the theory so implied by use that we are now to examine.

First of all, Whitehead does not explicitly distinguish between intellect and sense, but rather between sense-perception and thought. By intellect I shall mean the faculty of thought.

> Thus there are three components in our knowledge of nature, namely, fact, factors, and entities. Fact is the undifferentiated terminus of sense-awareness; factors are the termini of sense-awareness, differentiated as elements of fact; entities are factors in their function as the termini of thought. . . . Thought is wider than nature, so that there are entities for thought which are not natural entities.[6]

Attention is called to three points: (*a*) the distinction here made between sense-awareness and thought; (*b*) the definitions given to the technical terms "natural entity" — one of the most used terms in the book — and "factor"; (*c*) the factor and the natural entity are one and the same reality — the distinction between them is purely mental. In this regard he writes: "The separate distinction of the entity in thought is not a metaphysical assertion, but a method of procedure necessary for the finite expression of individual propositions."[7] When, therefore, he points out the difference between the entity and the factor, he is equivalently pointing out what he considers to be the difference between what the senses perceive and what the intellect apprehends in the deliverance of the senses. A study of the natural entity will then give us what he takes to be the content of our intellectual apprehension of nature.

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[3] *Ibid.*, p. 46.
[4] *Ibid.*, p. 30.
[5] *Ibid.*, p. 28.
[6] *Ibid.*, p. 13.
[7] *Ibid.*, p. 12.

THE NATURAL ENTITY: TERMINUS OF THOUGHT (OBJECT OF THE INTELLECT)

To illustrate his concept of the natural entity Whitehead analyses a "demonstrative phrase."

> By a demonstrative phrase I mean a phrase which makes the recipient aware of an entity in a way which is independent of the particular phrase. . . .
>
> A demonstrative phrase is a gesture. It is not itself a constituent of the proposition, but the entity which it demonstrates is such a constituent. . . .
>
> Let us take some examples. Suppose that the expositor is in London, say in Regent's Park and in Bedford College . . . which is situated in that park. He is speaking in the college hall and he says,
>
> 'This college building is commodious.'
>
> The phrase 'this college building' is a demonstrative phrase. Now suppose the recipient answers,
>
> 'This is not a college building, it is the lion-house in the Zoo.'
>
> Then, provided that the expositor's original proposition has not been couched in elliptical phraseology, the expositor sticks to his original proposition when he replies,
>
> 'Anyhow, *it* is commodious.'
>
> . . . he is now in a position to repeat the original proposition with the aid of a demonstrative gesture robbed of any suggestiveness . . . by saying,
>
> *'It* is commodious.'
>
> The *'it'* of this final statement presupposes that thought has seized on the entity as a bare objective for consideration.[8]

What thought seizes upon, then, in the data of the senses, what the intellect apprehends, is devoid of content, is a "bare 'it' "? It seems so. The express purpose of the discussion just quoted was to explain the meaning of the natural entity and the necessity of entities for thought;[9] the point of the discussion is that the subject, of which the affirmation is finally made, is stripped of the note "college building" and all implied therein. What about the note "commodious" itself? Does the intellect apprehend a commodious "it," and make its affirmation on the strength of this apprehension? I do not believe so; Whitehead means exactly what he says when he speaks of the entity as *bare*. I quote two further passages in support of this contention.

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[8] *Ibid.*, pp. 6-8.

[9] *Ibid.*, p. 5, last paragraph.

> No characteristic of nature which is immediately posited for knowledge by sense-awareness can be explained. It is impenetrable to thought, in the sense that its peculiar essential character which enters into experience by sense-awareness is for thought merely the guardian of its individuality as a bare entity. Thus for thought 'red' is merely a definite entity, though for awareness 'red' has the content of its individuality. The transition from the 'red' of awareness to the 'red' of thought is accompanied by a definite loss of content, namely by the transition from the factor 'red' to the entity 'red.' This loss in the transition of thought is compensated by the fact that thought is communicable whereas sense-awareness is incommunicable.[10]

This is to exclude from the sense data any exact or necessary element which the intellect might apprehend in them, but which the senses themselves might not be able to perceive: "no characteristic . . . can be explained. It is impenetrable to thought"; the transition from the factor to the entity involves only loss of content, with the single compensation of communicability. The expression "guardian of its individuality as a bare entity" clearly implies that the entity, the terminus of thought, is devoid of content.

The next passage has to do with Whitehead's explanation of the origin of the concept of substance. In his opinion it is a concept to which there corresponds nothing real and which owes its origin to an illicit transition from the logical to the real order.

> The entity has been separated from the factor which is the terminus of sense-awareness. It has become the substratum for that factor, and the factor has been degraded into an attribute of the entity. In this way a distinction has been imported into nature which is no distinction at all. A natural entity is merely a factor of fact, considered in itself. Its disconnexion from the complex of fact is a mere abstraction. It is not the substratum of the factor, but the very factor itself as *bared* in thought. Thus what is a mere procedure of the mind in the translation of sense-awareness into discursive knowledge has been transmuted into a fundamental character of nature.[11]

What is to be noted here is (*a*) that Whitehead maintains that the notion of substance arises from the transmutation of a procedure of mind into a fundamental character of nature and (*b*) that, in the transmutation, the entity becomes the substratum, while the factor becomes the attribute of the substratum. But this substratum, as

[10] *Ibid.*, p. 13.

[11] *Ibid.*, p. 16. Italics mine. See also p. 20, from "Matter (in the scientific sense)" to the end of the paragraph.

Whitehead conceives it, is so bare of content as to be unknown and unknowable; wherefore he abandons the concept altogether as a pure postulate.[12] It follows that he conceives the natural entity, as such, to be precisely a *bare* "it."

A rather obvious difficulty immediately suggest itself. With what right does the intellect make any judgment about a "bare 'it' "? Whitehead neither explicitly asks nor answers this question in *The Concept of Nature,* but the following passages indicate the answer he would give; they serve, too, to emphasize the bareness of the entity.

> The entity is so disclosed as a relatum in the complex which is nature. It dawns on an observer because of its relations; but it is an objective for thought in its own bare individuality. Thought cannot proceed otherwise; namely, it cannot proceed without the ideal bare 'it' . . .[13]
>
> . . . thought places before itself bare objectives, entities as we call them, which the thinking *clothes* by expressing their mutual relations.[14]

So thought, or judgment, about anything in nature is a process of clothing what is in itself bare; at least this is the case when the judgment affirms a relation of an entity. It is also the case when a property is affirmed:

> When we speak of nature as a complex of related entities, the 'complex' is fact as an entity for thought, to whose bare individuality, is *ascribed* the property of embracing in its complexity the natural entities.[15]

So far, then, the objective intellectual apprehension, (the "what is apprehended"), is empty of content, a "bare 'it' "; in consequence, a judgment about a natural entity, made by the intellect, is a "clothing" or "ascribing" – it is not an affirmation of what the intellect discovers or sees in the natural entity. No provision is made for the intellect's going beyond the senses in its penetration of nature. So Whitehead excludes from nature, *as known to us,* every element of exactitude and necessity that surpasses what the senses can perceive. We shall now see that he goes the whole way and excludes from nature, *as it is in itself,* these suprasensible elements of exactitude and necessity. In this matter, his treatment of the instant of time provides us with a paradigm.

His argument is this: There is no such thing as nature at an instant posited by sense awareness; what the senses deliver is nature through

[12] *Ibid.,* pp. 16-18.
[13] *Ibid.,* p. 8.
[14] *Ibid.,* p. 12. Italics mine.
[15] *Ibid.,* p. 13. Italics mine.

a period, that is, a duration of some length; therefore, nature at an instant is not a natural entity – *there is no nature at an instant.* In his own words,

> Instantaneousness is a complex *logical* concept of a procedure in thought by which *constructed* logical entities are *produced* for the sake of the simple expression in thought of properties of nature. Instantaneousness is the concept of all nature at an instant, where an instant is conceived as deprived of all temporal extension. For example we conceive of the distribution of matter in space at an instant. This is a very *useful* concept in science especially in applied mathematics; but it is a very complex idea so far as concerns its connexions with the immediate facts of sense-awareness. There is no such thing as nature at an instant posited by sense-awareness. What sense-awareness delivers over for knowledge is nature through a period. Accordingly nature at an instant, *since it is not itself a natural entity,* must be defined in terms of genuine natural entities. Unless we do so, our science, which employs the concept of instantaneous nature, must *abandon all claim to be founded on observation.*[16]

A few pages later we read, ". . . in truth there is no nature at an instant . . ."[17] What immediately concerns us here is not the reality of the instant, but the *principle of knowledge* so clearly applied: what the senses cannot perceive in nature is not a natural entity, does not exist in nature. I shall call this principle Whitehead's principle of empiricism.[18]

It might be argued that the principle of empiricism in the philosophy of nature is nothing more than a corollary to Whitehead's definition of nature, "nature is that which we observe in perception through the senses"; so in the philosophy of nature he is concerned only with what the senses perceive and prescinds completely from what the intellect might apprehend. This supposition, however, cannot be admitted. (*a*) Whitehead maintains that natural philosophy is engaged with natural entities; natural entities are factors – that is, sense-data – considered as *termini of thought.* (*b*) Though he restricts his investigation to things perceived by the senses, many of his expressions indicate that he by no means prescinds from what the intellect can know

[16]*Ibid.,* pp. 56-57. Italics mine.

[17]*Ibid.,* p. 61.

[18]See also Chapter XI of Whitehead's *Adventures of Ideas* (New York: Macmillan Co., 1933). On page 228 we read: "All knowledge is derived from, and verified by, direct intuitive observation. I accept this axiom of empiricism as stated in this general form."

of these sensible things. For instance he says, "In the philosophy of science we seek the *general* notions which apply to nature, namely, to what we are aware of in perception";[19] [science] "is determining the character of things known";[20] and the problem of natural philosophy "is to discuss the relations *inter se* of things known, abstracted from the bare fact that they are known."[21] (*c*) In the passage just quoted, regarding the instant, he concludes from the fact that the instant is not perceptible to the senses, not merely that the instant is not a natural entity, but that "in truth there *is no* nature at an instant" and that "instantaneousness is a complex logical concept of a procedure of thought in which *constructed logical entities are produced.*" Clearly, then, his principle of empiricism means this: There are no strictly intelligible elements in the things perceived by the senses; an intellectual concept whose content includes any element the senses cannot perceive is a logical *construction,* not an apprehension of what is.

Our laboring of this point is justified. The consequences of postulating such a principle are obviously serious. Moreover, there are other statements in *The Concept of Nature,* shortly to be studied, which to all appearances imply an intellectual knowledge of nature inconsistent with the principle of empiricism. Finally, the principle itself is far from self-evident — to say the least, its truth is not sense-perceptible.

Let us look at Whitehead's own illustration, that of the inextended instant. By way of example consider two billiard balls that roll towards each other on a table and collide. For an interval (or, in Whitehead's usual expression, a duration) they are not in contact; then for an interval they are in contact. The interval of contact has a beginning, and that beginning must necessarily be an instant — it cannot be an interval. That the interval of contact has a beginning is obvious enough; once it was not and then it came to be. It is clear, too, that the beginning of the interval of contact cannot itself be an interval. If it were an interval, inasmuch as it would be of some extension, it could be divided into at least two subintervals, the second of which could not be the beginning. This instant is of course also the end of the interval of noncontact; it divides the intervals of contact and noncontact. According to this reasoning, the instant, so defined, is not perceptible to the senses; and yet it would seem to enjoy all the objective reality that belongs to the two intervals in question. It is not more of a logical construction than are the two durations. Admittedly, this

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[19] *The Concept of Nature,* p. 28. Italics mine.
[20] *Ibid.,* p. 40.
[21] *Ibid.,* p. 30.

instant could not exist apart from the durations which it divides, but it is equally true that these two durations could not exist as these two durations without this instant.

It is difficult to escape the conclusion of this argument. Whitehead would, I believe, deny the supposition that there really are two *distinct* intervals on the grounds that we cannot distinguish them in sense perception; he speaks of such intervals as overlapping. But they cannot overlap. There can be no interval, however small, throughout which the balls are both in contact and not in contact. His only way out is to deny the fundamental basis of the argument, namely, that there is a real beginning or end of contact and, ultimately, that the two balls are two distinct things. This he does effectively, if not explicitly, when he identifies an object like a billiard ball with its "field." The field extends throughout space and so does the object which is identified with it. Given this, there can be no beginning of contact between the balls – they are always in contact. The identification is clearly made in the following somewhat bewildering passage.

> In truth the object in its completeness may be conceived as a specific set of correlated modifications of the characters of all events, with the property that these modifications attain to a certain focal property for those events which belong to the stream of its situations. The total assemblage of the modifications of the characters of events due to the existence of an object in a stream of situations is what I call the 'physical field' due to the object. But the object cannot really be separated from its field. *The object is in fact nothing else than the systematically adjusted set of modifications of the field.* The conventional limitation of the object to the focal stream of events in which it is said to be 'situated' is convenient for some purposes, but it obscures the ultimate fact of nature. From this point of view the antithesis between action at a distance and action by transmission is meaningless.[22]

If this is all true, there can be no doubt that the clear-cut distinction between our two intervals will be blurred out of existence. But so also will the clear-cut distinction between the two balls, and between the balls and the players. Exactness will not only be an "ideal of thought," it will be a creation of thought.

The explanation of sense data presented in this passage is scarcely obvious. Certainly it is not imposed by the direct deliverance of sense awareness. It involves, indeed, a very great deal of interpretation –

[22] *Ibid.*, p. 190. Italics mine.

scientific interpretation in the matter of the field, metaphysical interpretation in the definition given of the intrinsic nature of the object, in the identification of the object with the field, and in the labeling as "conventional" and "convenient" the interpretations which differ from Whitehead's own. Clearly, if to deny the identification of an object with its field is a metaphysical interpretation, to affirm that identity cannot but be a metaphysical interpretation. The field itself is not immediately perceptible; much less is its identification with the object to which it is attributed. What are alone perceptible are the effects of the field, such as the motions of needles; the rest is the issue of a reasoning process in which some physical hypothesis or theory is supposed. In particular, these effects manifest only *one* field in any region, not many fields due to many objects. The analysis of this field into many components is a mental operation. If the field and the object are taken as identical, it should follow that there exists in reality only one object, which is everywhere.

II. THE METHOD OF EXTENSIVE ABSTRACTION— MATHEMATICS APPLIED TO NATURE

The passage we quoted on instantaneousness[23] serves as a good introduction to this section. The argument is this: Nature at an instant is not a natural entity; but nature at an instant is a very useful concept, especially in applied mathematics; unless nature at an instant is defined in terms of genuine natural entities, science which employs this concept must abandon all claim to be founded on observation. The other concepts employed in applied mathematics have exactly the same status. They are not natural entities because they are of an exactitude that is not perceptible to the senses; they, too, must be defined in terms of genuine natural entities. The system of abstractive sets is Whitehead's method of providing the required definitions. The chapters in *The Concept of Nature* on time, method of extensive abstraction, space and motion, and congruence are devoted to the development of these definitions.

One fact must be noted well right at the beginning. "Definition" as here used by Whitehead — for example, in the passage quoted in note 16 above — has a very specialized sense. It *cannot* be a statement of what the defined *is;* for what *is not* a natural entity (an instant, for example) cannot *be* a natural entity or a combination of natural entities. To "define" an instant in terms of natural entities can only

[23]See nn. 16 and 17.

mean "to set up a one-to-one correspondence" of some kind between the instant and some natural entity or entities. When the word is used in this restricted sense I shall write it in quotation marks — "definition," "defined," and so on.

Here is how Whitehead sets up such a correspondence for the instant. Giving the name "moment" to "nature at an instant," he prefaces his "definition" of moment with two preliminary definitions, namely, duration and family of durations. Duration is "the whole simultaneous occurrence of nature which is now for sense-awareness", "a concrete slab of nature limited by simultaneity which is an essential factor disclosed in sense-awareness."[24] A duration has within itself "antecedents and consequents which are also durations which may be the complete specious presents for quicker consciousnesses."[25] Whitehead insists that simultaneity is not instantaneous, but has the extension of a duration. It is to be noted that a relation to consciousness is included in the definition of simultaneity and hence derivatively in the definition which he gives of duration. Of "family of durations" he writes: ". . . two durations which belong to the same family *either* are such that there are durations which are parts of both *or* are completely separate. Furthermore the converse of this proposition holds."[26] As to "definition" of a moment, he says this:

> Consider a set of durations all taken from the same family. Let it have the following properties: (i) of any two members of the set one contains the other as a part, and (ii) there is no duration which is a common part of every member of the set. . . . the durations of any set with the properties just enumerated must be arranged in a one-dimensional serial order in which as we descend the series we progressively reach durations of smaller and smaller temporal extension . . . the set of durations can have no smallest duration nor can it converge towards a duration as a limit. For the parts either of the end duration or of the limit would be parts of all the durations of the set and thus the second condition for the set would be violated. I will call such a set of durations an "abstractive set" of durations.[27]

Having thus described the construction of an abstractive set, Whitehead indicates some of its properties and its function.

> It is evident that an abstractive set as we pass along it converges to the ideal of all nature with no temporal

[24] *The Concept of Nature,* pp. 52-53.

[25] *Ibid.,* p. 56.

[26] *Ibid.,* p. 60.

[27] *Ibid.,* pp. 60-61. In this description I omit a good deal of detail as irrelevant to our study of Whitehead's empiricism.

> extension, namely, to the ideal of all nature at an instant. But this ideal is in fact the *ideal of a nonentity*. What the abstractive set is in fact doing is to guide thought to the consideration of the progressive simplicity of natural relations as we progressively diminish the temporal extension of the duration considered. Now the whole point of the procedure is that the *quantitative expressions of these natural properties do converge to limits though the abstractive set does not converge to any limiting duration*. The laws relating these quantitative limits are the laws of nature 'at an instant,' *although in truth there is no nature at an instant* and there is only the abstractive set. Thus *an abstractive set is effectively the entity meant* when we consider an instant of time without temporal extension. It subserves the necessary purposes of giving a definite meaning to the concept of the properties of nature at an instant. I fully agree that this concept is fundamental in the expression of physical science. The difficulty is to express our meaning in terms of the immediate deliverances of sense-awareness, and I offer the above explanation as a complete solution of the problem.[28]

He then defines a moment as the class of all abstractive sets of durations with the same convergence. In the paragraph following he shows how moments may be ordered, and he concludes: "such an ordered series of moments is what we mean by time defined as a series."[29] In Chapters IV-VI, he "defines" in an analogous manner other mathematical entities employed in the mathematics of relativity — the point, the line, the solid, parallelism, and so on. I shall now discuss the above paragraph (n. 28) under three headings: the problem Whitehead proposes to solve, the solution he offers, and a criticism of his solution.

A. THE PROBLEM

To clarify Whitehead's problem for ourselves, it is well to state another problem with which it could be confused, one which supposes an outlook diametrically opposed to his. It is this. We suppose that the properties of nature are themselves of mathematical exactness. There are consequently mathematical concepts and formulae that express these properties precisely. Owing to the limitations of our powers of observation, however, we are unable to discover exactly what these formulae are. The best we can do is try to arrive at better and

[28] *Ibid.*, pp. 61-62. Italics mine. We have in this paragraph clear support for what we said above regarding Whitehead's empiricism.

[29] *Ibid.*, p. 64.

better approximations of these correct expressions and at a comparatively better estimate of our margin of error. The problem in this supposition is to *discover* an exactitude which *exists*. This is *not* Whitehead's problem, since he denies its fundamental supposition, namely, that in the world revealed by our senses there is a perfect exactitude to be discovered.

His problem is rather this: In the science of nature we have perfectly exact concepts and formulae employed to express what is in itself essentially lacking in exactitude; how then are we to reconcile the exactitude of the scientific expression with the essential inexactitude of the nature which science claims to be expressing? For Whitehead this is an urgent problem. On the one hand his extensive work in applied mathematics had made him keenly aware of the amazing effectiveness of this science in guiding and directing research (see, for instance, his chapter on mathematics in *Science and the Modern World* [New York: Macmillan Co., 1925]). On the other hand he had committed himself to a principle of empiricism which banished from nature anything imperceptible to the senses and hence everything of mathematical exactitude.

To dissolve this paradox he devised the system of abstractive elements, a system of one-to-one correspondences between exact mathematical entities and inexact sense-perceptible natural entities. "Thus an abstractive set is effectively the entity meant when we consider an instant of time without temporal duration."

B. THE SOLUTION

The one-to-one correspondence is a widely used and valuable device in mathematics. It will be helpful to look briefly at an application of it in projective geometry. Let $P, Q, R, S,$ and so on be a set of planes of projective space, and $p, q, r, s,$ and so on be points of the same projective space. Let there be set up some definite one-to-one correspondence between the planes and the points, so that to any plane P there corresponds one, and only one, point p, and vice versa—that is, $P - p$. Then, provided we assume the axioms (postulates) of projective geometry, for every theorem proved for the planes an exactly corresponding theorem will be true for the points. For example, a line L is determined by the planes PQ (by the intersection of the two); a line l is determined by the two corresponding points pq (the join of the two); then, if L lies in any other plane R, l will pass through the corresponding point r. Again, if three planes $P\ Q\ R$ intersect in a point s, then the three corresponding points $p\ q\ r$ will all lie in the corresponding plane S. So to prove that three given planes all contain the same straight line,

it is equivalent to prove that the three corresponding points all lie on one straight line.

With regard to such mathematical one-to-one correspondences the following facts are essential. (*a*) The correspondence must be so defined that to a definite element on one side there corresponds a definite element on the other. The method extends only to elements that have been so defined. (*b*) Similarly, to any definite relation between the elements on one side, there must correspond a definite relation between the corresponding elements on the other side. Again the method extends only to relations that have been so defined — only these defined relations may be used in any proof. (*c*) The relations on *both* sides are necessary relations. They must hold everywhere and always — admit of no exceptions. (*d*) These conditions are essential to the validity of any proof by this method. (*e*) Correspondence does *not* mean identity. The point *is* not the corresponding plane, nor *is* the join of two points the intersection of the two corresponding planes.

Whitehead's system of abstractive sets may be fairly described as an attempt to set up an analogous one-to-one correspondence between mathematical elements of a four-dimensional geometry on the one side and natural entities on the other. This appears from what we have already seen of the "definition" of the instant, and from a reading of Chapters IV-VI of *The Concept of Nature*. If such a correspondence could be satisfactorily set up, then a geometric proof of a proposition would be equivalent to a proof of a corresponding proposition for the natural entities. We could then use geometry to express the properties of nature which had been so "defined."

The necessary requirements for a correspondence that would issue in such a proof for the natural entities, are the three given above. (*a*) The correspondence must be so defined that to each geometric element used in the proof there corresponds a definite natural entity. This condition Whitehead aims to satisfy in "defining" point, instant, and so on in terms of abstractive sets. (*b*) To any geometric relation used in the proof there must correspond a well-defined relation between the corresponding natural entities. Again only such relations may be validly employed as have been "defined." Whitehead's "definitions" of parallelism, perpendicularity, and so on are directed at fulfilling this requirement. There are many relations which he has left undefined, but this could be remedied in a more detailed development of his system. (*c*) In the strictly mathematical case, the entities and relations on *both* sides remain always unchanged — they are essentially unchangeable. In the present case, this same is true for the mathematical elements, the entities and relations involved; for the geometric proof

to be valid for the natural entities, we must *know* that the corresponding natural entities and relations remain also unchanged. The reason is obvious. If the mathematical elements remain unchanged, while the corresponding natural elements do change, the correspondence simply ceases to hold. For the validity of the proof it is essential that the correspondence hold throughout.

C. CRITICISM OF WHITEHEAD'S SOLUTION

1. NECESSITY OF NATURAL RELATIONS

To begin with the third of the requirements just mentioned — namely, that the relations in question between the natural entities should be known to be necessary relations, admitting of no exceptions — Whitehead does not even treat of this in *The Concept of Nature*. However, given his principle of empiricism, he could not possibly vindicate our knowledge of this necessity. The necessity of the relations is no more sense-perceptible than is their exactitude and in consequence should with equal right be excluded from nature. In Euclidean geometry, to take a simple example, the angles at the base of an isosceles triangle are necessarily equal to each other. How can we know that this is true for the corresponding isosceles triangle in nature? The senses do not give us this information. We can measure any number of isosceles triangles and find the base angles equal in every case. This tells us that the relation was verified in the cases measured — nothing more. That the relation is a necessary relation, that it *must* hold in every case, is something we can never ascertain by measuring and observation. According to the principle of empiricism, then, there is no such necessity in nature, just as there is no instant in nature. If we use this particular relation in a geometric proof we can draw no legitimate conclusion for the corresponding case in nature. The same is true for *any* relation employed in the geometric proof. Until it is established that there is necessity in the natural relations and that we can know that such necessity is there, geometric proof is in no sense of the term a proof for nature.

It might be argued that at least the method can be used as a guide to observation even if it does not provide strict proof. This cannot be admitted either. Let us be clear on the purpose of the system of sets. The purpose is *not* to prove that mathematics is a most excellent instrument in directing and guiding research. This is a well attested fact and needs no proof; the history of science is in large part the story of the triumph of mathematics. The problem of philosophy of science is to explain this fact. More precisely, the problem for Whitehead is

to reconcile this fact with his principle of empiricism. I maintain that until we can vindicate a knowledge of necessity in natural relations, we have no explanation of how mathematics can guide research. No matter how many isosceles triangles we have examined only to find the base angles always equal to each other, observation alone gives no reason whatever even to expect that the same relation will be verified in a triangle yet to be examined.

Because, therefore, the method of extensive abstraction rests on the supposition that there is no such necessity in nature, that method cannot explain the role of mathematics in natural science.

2. THE CORRESPONDENCE ITSELF

The abstractive set has been so defined as to have no smallest duration.[30] The abstractive set is a natural entity. Are these two statements consistent with each other? The first implies that, given a duration *d*, no matter how small, the set contains durations smaller than *d* — in fact, an indefinite multitude of them. The second involves that these small durations should all be perceptible to the senses, for (*a*) it is these small durations that are the significant members of the set and (*b*) by definition a natural entity is perceptible to the senses. Whitehead, himself, explicitly affirms *a:* (he is speaking of the general case of the abstractive set and so speaks of events instead of particular durations):

> It will be noted that it is the infinite series, as it stretches away in unending succession towards the small end, which is of importance. The arbitrarily large event with which the series starts has no importance at all. We can arbitrarily exclude any set of events at the big end of an abstractive set without the loss of any important property to the set as thus modified.[31]

For an abstractive set, then, to have no smallest member (duration) and still to qualify as a natural entity requires the assumption that there is *no* duration so small that the senses cannot distinguish it. The word "distinguish" is used advisedly. It is the durations towards the small end that are important — "the whole point of the procedure is that the quantitative expressions of these natural properties do converge to limits" (see n. 28). These quantitative expressions are mathematical expressions of measurements. As mathematical expressions they have a perfect exactitude, which the measurements, because of the limitations of our observational powers, do not have. Like the instant, and for the same reason, they themselves need to be "defined"

[30] See n. 27.

[31] *The Concept of Nature*, pp. 81-82.

in terms of genuine natural entities. The measurements of which these quantitative expressions are the expressions are taken one from each member of the abstractive set. There can therefore be no quantitative expression for any member that is not distinguishable by the senses, and it is the quantitative expressions at the small end of the series that are of consequence in determining convergence.

Though the assumption mentioned is necessary to Whitehead's argument, it is one that cannot be defended even theoretically.

In any case, the method involves an insuperable difficulty in application. The scientific laws of "nature at an instant" are mathematical equations, while really there is not any "nature at an instant." The precise purpose of the abstractive set is to derive from nature definite quantities which will correspond uniquely with the terms of the mathematical equations. To achieve this end Whitehead seeks to avail himself of a property of convergent infinite series. Such series provide a unique limit without requiring that we write down all the terms. His procedure is this. Corresponding to each member of the set is a measurement, and corresponding to each measurement is a mathematical expression. Corresponding, therefore, to an abstractive set there is an infinite series of mathematical expressions. If the series converges, it furnishes a unique limit. Finally, this mathematical limit is one of the terms in the equation expressing a law of "nature at an instant." The process is quite definite, and a unique correspondence is provided between the terms of the equations and the abstractive sets.

> Now the whole point of the procedure is that the quantitative expressions of these natural properties do converge to limits though the abstractive set does not converge to any limiting duration. The laws relating these quantitative limits are the laws of nature 'at an instant,' although in truth there is no nature at an instant and there is only the abstractive set. . . . It [the abstractive set] subserves all the necessary purposes of giving a definite meaning to the concept of the properties of nature at an instant. (See n. 28.)

Clearly, the definiteness of the mathematical limit is essential to this argument. Now what happens in practice? We can make measurements only for those durations which we can actually distinguish; once we reach a point where no further distinguishing is possible, measurement stops, and hence so do the mathematical expressions of measurements. From that point on we can write down no further term of the series; so the series also stops. But to determine whether a given series converges, and much more to ascertain the precise limit, we must be

able to write down *any* term of the series; and it is the terms at the small end that are alone important. Because in any particular instance these terms at the small end will be missing from the series associated with the abstractive set, we shall not have strict mathematical convergence or a unique limit. Convergence and the limit may be indicated by the terms we do have, but there will be about both an indefiniteness which is directly proportionate to the indefiniteness of sense perception. The method of extensive abstraction leaves Whitehead's problem approximately where he found it.

The method is an ingenious attempt to explain how a nature that is supposed to be essentially lacking in necessity and exactitude can be described by mathematical equations which are both necessary and exact in character. I have indicated why the method seems to me to fail. It is nevertheless an investigation of some value. The very thoroughness with which Whitehead carried it out provides a posteriori evidence that the problem is an impossible one — that if we assume nature to be essentially without exactitude and necessity, we can expect nothing but an inexact and contingent science. Looking from the other direction, the remarkable success of mathematical physics indicates that in the nature which is its subject matter there must be entities and relations which are capable of mathematical treatment precisely because they are exact and necessary. This points the way to a more fruitful approach to natural philosophy in which the philosopher would abandon the arbitrary limitations of the principle of empiricism and admit that the intellect as well as the senses plays an indispensable part in our observation of nature.[32]

3. AMBIGUITY DUE TO "DEFINITION"

We have seen that Whitehead, in his method of extensive abstraction, gives to the word "definition" the specialized sense of "one-to-one" correspondence. The case of the instant is typical: ". . . nature at an instant, since it is not itself a natural entity, must be defined in terms of genuine natural entities." The "definition" is provided by a suitably constructed abstractive set, of which he writes: "Thus an

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[32]For a criticism of Whitehead's method of abstraction see V. F. Lenzen's "Scientific Ideas and Experience" (*University of California Publications in Philosophy*, VIII [1926], 186-87). Mr. Lenzen accepts the truth of the empiricist principle and concludes: "An attempt to derive the fundamental concepts of mathematics . . . from the immediate deliverances of sense-awareness is bound to fail." Given the assumption, I cannot see how this conclusion can be questioned.

On the application of mathematics to nature, see Peter Hoenen, S.J.,'s "Pour une Philosophie de la Connaissance de l'Etendu Physique" (*Gregorianum*, XXX, 193-203).

abstractive set is effectively the entity meant when we consider an instant of time without temporal extension."[33] Clearly the instant of time *is* not the abstractive set, for the set is taken to be a natural entity, while the instant is not a natural entity. But the set and the instant are supposed to correspond uniquely. To give such a technical meaning to an ordinary word is legitimate, but it involves a danger for reader and writer alike. The word may be used now in the technical sense, now in the ordinary sense, without carefully distinguishing between the two. In the present case there is apt to be confusion of *is* and *corresponds to*. I shall now show that Whitehead did not succeed in avoiding this confusion and as a result is guilty of a number of ambiguous and apparently contradictory statements.

The point of space needs "definition" for the same reason as the instant of time needs it.

> We now turn to space. The first thing to do is to get hold of the class of abstractive elements which *are in some sense the points of space*. . . . Furthermore, points which are thus arrived at represent the ideal of events without any extension, though *there are in fact no such entities as these ideal events*. These points will not be the points of an external timeless space but of instantaneous spaces. We ultimately want to arrive at the timeless space of physical science, and also of common thought which is now tinged with the concepts of science. It will be convenient to reserve the term 'point' for these spaces when we get to them. I will therefore use the name *'event-particles'* for the ideal minimum limits to events. Thus an event-particle *is* an abstractive element and as such *is* a group of abstractive sets . . .[34]

I note first that the correspondence here is between the event-particle and a group of abstractive sets. This changes nothing, as the group, like the individual set, is taken to be a natural entity. The statement "thus the event-particle *is* an abstractive element" is, therefore, as it stands, self-contradictory. To be true, it should read "thus the event-particle *corresponds to* an abstractive element," or, to cite the parallel expression for the instant, "thus an abstractive element is effectively the entity meant when we consider an event-particle." This is surely Whitehead's meaning; and if the substitution of *is* for *corresponds to* were merely verbal, to dwell on this point would be quibbling. The substitution, however, turns out to be something more than verbal, with consequences that are serious.

From the paragraph just quoted it is clear that the event-particle

[33] *The Concept of Nature*, pp. 57 and 61.
[34] *Ibid.*, pp. 85-86. Italics mine.

which "represents the ideal of events without any extension" is not an entity. This same event-particle we meet later in *The Concept of Nature.*

> We can express the properties of this structure [i.e., of the world we know – cf. the preceding sentence] in terms of the *ideal limits* to routes of approximation, which I have termed *event-particles.* Accordingly event-particles are *abstractions* in their relations to the more concrete events. But by this time you will have comprehended that you cannot analyse concrete nature without abstracting. Also I repeat, the *abstractions of science are entities which are truly in nature,* though they have no meaning in isolation from nature.[35]

The "I repeat" refers to what he had said on page 171:

> Undoubtedly molecules and electrons are abstractions. But so is Cleopatra's Needle. The concrete facts are the events themselves – I have already explained to you that to be an abstraction does not mean that an entity is nothing. It merely means that its existence is only one factor of a more concrete element in nature.

Whitehead here maintains that the event-particle is definitely an entity which is in nature; in fact, it enjoys in this respect the same status as do the molecules and Cleopatra's Needle. This directly contradicts what he wrote of the event-particle in the passage quoted just above (see n. 34). The difficulty is aggravated by the fact that it involves all the abstractions of science, at least those he found it necessary to "define" by abstractive sets. The very reason he found it necessary to "define" them was that they are not natural entities. (Recall the expressions "in truth there is no nature at an instant," "nature at an instant since it is not itself a natural entity must be defined in terms of genuine natural entities. Unless we do so, our science which employs the concept of instantaneous nature must abandon all claim to be founded on observation.")[36]

I have already indicated the source of the contradiction. It results simply from Whitehead's substitution of *is* for *corresponds to.* He can consistently assert that the abstractive element, corresponding to the event-particle, is an entity in nature; he cannot consistently assert that the event-particle itself is such an entity. The latter assertion would be a denial of the fundamental aim of *The Concept of Nature,* namely, to provide the required "definitions," in terms of genuine natural entities, for the abstract concepts of science.[37] The result is misleading.

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[35] *Ibid.,* p. 173. Italics mine.
[36] See nn. 16 and 17.
[37] *The Concept of Nature,* chaps. iii-vi.

Statements like the one just examined are calculated to give the impression that, by the method of extensive abstraction, Whitehead has vindicated for these ideal exact entities a real status in nature. He has not done so. The "event-particle" *is not* in nature, nor has he made any effort to prove that it is. What he has attempted is to put the logically constructed "event-particle" into a unique correspondence with a genuine natural entity. The same is true of the other mathematical entities he has so "defined."

I shall examine one further passage which for the same reason is likely to prove misleading. It appears in the chapter on congruence.

> Factors in nature which are without passage will be called objects. . . .
>
> Objects which are not posited by sense-awareness may be known to the intellect. For example, relations between objects and relations between relations may be factors in nature not disclosed in sense-awareness but known by logical inference as necessarily in being. Thus objects for our knowledge may be logical abstractions . . . a right-angle is a perceived object which can be situated in many events; but, though rectangularity is posited by sense-awareness, the majority of geometrical relations are not so posited. Also rectangularity is in fact often not perceived when it can be proved to have been there for perception. Thus an object is often known merely as an abstract relation not directly posited in sense-awareness although it is there in nature.[38]

Anyone might be fairly excused for citing this paragraph as a proof that I have erred in attributing to Whitehead the principle of empiricism. The statement that "objects which are not posited by sense-awareness may be known to the intellect" appears to be an explicit denial of that principle – that what the senses cannot perceive is not in nature. In fact, if the words "which are not posited by sense-awareness" are taken as equivalent to "which cannot be perceived by the senses," we do have here an explicit repudiation of the principle of empiricism. But in such a supposition Whitehead would be contradicting himself. He has defined nature as "that which we observe in perception through the senses";[39] he has defined factor as a terminus of sense awareness.[40] If, therefore, the words "which are not posited by sense-awareness" and "which cannot be perceived by the senses" are equivalent, surely an object which is a "factor in nature" and at the same time "not posited by sense-awareness" is self-contradictory. His

[38] *Ibid.*, pp. 125-26.
[39] See n. 2.
[40] See n. 6.

meaning must be that there are objects which, although perceptible, are often actually not perceived; this is indicated by his illustration of the right angle. But this very illustration is a further instance of the ambiguity which has already been pointed out. There is the strictly mathematical right angle, which as such cannot be perceived by the senses and is accordingly not a natural entity. Precisely because of this Whitehead "defined" this mathematical right angle in terms of genuine natural entities.[41] There is, besides, the natural right angle which is the corresponding abstractive element. It is of course this natural right angle which is "a perceived object which can be situated in many events" and which is "there for perception." When he writes that "rectangularity is in fact often not perceived when it can be proved to have been there for perception," he apparently confuses the two. The only rectangularity that can be "there for perception" is the natural rectangularity; the rectangularity that can be directly "proved" is mathematical rectangularity. The proof will clearly be a mathematical proof, immediately involving only mathematical entities and relations. The conclusion will be that, given these mathematical entities and relations, mathematical rectangularity will be verified. Whitehead, according to his own principle of empiricism, cannot conclude that this rectangularity is verified in nature. For him to conclude that even the natural rectangularity is thereby verified in nature, a good deal more than the mathematical proof is required. It is not enough that all the entities and relations used be "defined"; we must know besides that these relations are necessary relations. The principle of empiricism to which he adheres, as we have seen already, excludes not only our knowledge of necessary relations in nature, but the very existence of such relations in nature. Because nature at an instant is not perceptible, Whitehead concludes that "in truth there is no nature at an instant." To be consistent he must likewise conclude that "in truth there is no necessity in natural relations" and so "there is no mathematical proof for natural relations."

Read out of their context in *The Concept of Nature,* these passages (nn. 35 and 38) would almost inevitably lead the reader to believe that Whitehead maintains (*a*) the existence, in the world perceived by the senses, of elements that enjoy perfect exactitude — for example, the instant, the point, the mathematical right angle; (*b*) that these exact elements can as such be discovered in nature; (*c*) that consequently, since these objects are imperceptible to sense, we enjoy a supra-sensible intellectual knowledge of *what is* in nature. I hope I have justified my

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[41] *The Concept of Nature,* pp. 117-18.

contention that the reader would err in drawing such conclusions from these passages, conclusions that are foreign to the mind of Whitehead as expressed in *The Concept of Nature.* I have insisted a good deal on this point because there are many other statements in his works which indicate these same three conclusions, but none more clearly and emphatically than do those we have just examined. It would be impossible to indicate them more emphatically — "also I repeat, the abstractions of science are entities which are truly in nature." But fundamental in his whole investigation, and no less emphatic, is his statement that "in truth there is no nature at an instant and there is only the abstractive set." These two must be reconciled, and I believe they can be reconciled only in the manner I have outlined.

Let me summarize Whitehead's application of mathematics to nature. (*a*) The exact entities which are the object of mathematics do not exist in nature *because* they are as such imperceptible to the senses. (*b*) Taking the mathematics as given, Whitehead attempts to set up a one-to-one correspondence between the exact mathematical entities and the essentially inexact natural entities. (*c*) Though the mathematical entity *is not* the corresponding natural entity, he nevertheless uses the word "is" to express the relation between the two. (*d*) Only by so doing, substituting *is* for *corresponds to,* is he enabled to assert that the exact mathematical entities *are* in nature.

Clearly such verbal manipulation is not sufficient to get Whitehead's mathematical theory out of the purely logical order and into the real order. Even were it possible to establish his unique correspondence, the mathematical theorems would still remain affirmations about exact mathematical entities, none of which would exist in nature. We have seen that in fact such a correspondence has not been established between mathematical and natural entities. The reason why such an attempt is doomed to fail is this, that, no matter how we disguise the fact, the affirmations of mathematics are affirmations of exactitude and necessity. If we seriously make such affirmations about natural entities, we are affirming that there *is* exactitude and necessity in natural relations. Conversely, if natural entities are essentially inexact and involve no necessity, then these entities and their relations *cannot* be the object of exact and necessary mathematical statements. Exclude intellectual intuition of the exact and necessary in natural entities and you thereby destroy the rational foundation of applied mathematics.

There is an immediate application to metaphysics. In metaphysics we affirm that what we perceive is of such and such a nature, for instance, that it is a substance characterized by attributes or, with

Whitehead, that it is a concrescence of feelings. Now, while it is true that what we perceive might conceivably be a substance or be a concrescence of feelings, it is equally true that by our senses alone we cannot perceive *that* it is a substance or *that* it is a concrescence. Each affirmation — that what I perceive is a substance, that what I perceive is a concrescence of feelings — is an intellectual affirmation. If it is meant to be an affirmation of *what is* in nature, it necessarily presupposes an intellectual apprehension of nature, an apprehension that is excluded on a priori grounds by the principle of empiricism. Of a "bare 'it' " we can affirm nothing, unless perhaps that it is bare. Just as a consistent mathematical theory may be constructed in which the fundamental entities are taken to be points, instants, and other exact elements, so a logical theory may be evolved in which the fundamental entities are taken to be substances with their attributes or to be concrescences of feelings. But these theories will alike be inescapably confined to the domain of logical constructions until it be possible to make at least some intellectual affirmation, known for certain to be true, of what is in nature — that is, until the principle of empiricism be corrected.

The fact that Whitehead, without calling any attention to what he is doing, in applying mathematics to nature, has used *is* where he can only mean *corresponds to* inclines me to believe that he would claim no more for *is* in his application of metaphysics to the external world. The principle of empiricism would preclude his claiming any more for it; and if that principle is a true principle for the philosophy of nature, it is a true principle for the metaphysics of the external world.

There is excellent evidence that Whitehead did not change his attitude with regard to this principle in the later *Process and Reality*. "Co-ordinate division," elaborated in this latter work, is fundamentally the same as the system of sets described in *The Concept of Nature*. In the principle of applying geometry to nature and in the notion of "definition" not the slightest change is to be detected. This indicates that the reason which makes "definition" necessary is still operative, namely, the exclusion of any strictly intellectual intuition of natural entities.[42]

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[42] Alfred North Whitehead, *Process and Reality, an Essay in Cosmology* (Cambridge: Univ. Press, 1929), pp. 415 ff.

SRI AUROBINDO — A PHILOSOPHER OF RECONCILIATION

PAUL COLAÇO, S.J.

To a philosopher of any merit the problem of multiple existence in the world presents itself essentially as a problem of harmony — how to reduce a widely varied multiplicity of experience to a common source of intelligibility. Philosophy, if anything, is precisely this search for the intelligible unity of experience.[1] A sheer becoming or movement without an underlying principle of stability, or a purely disconnected multiplicity without a basic unity, is to the human mind a contradiction in terms. Even Bergson with his marked leanings towards the Heraclitean theory of universal flux[2] was, in spite of himself, forced to give to his so-called mobile reality some kind of featureless, colorless, compenetrating subsistency which he designated by that perplexing term, *durée* ("duration").[3]

To a Vedantin the world problem appears in quite a different light. For him the problem of the One and the Many is not, as for a Scholastic philosopher, how to relate the Many to the One in an intelligible unity of explanation, but rather how to *perceive* the Many appear in

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[1] J. E. O'Mahoney, *The Desire of God in the Philosophy of St. Thomas Aquinas* (London: Longmans Green, 1929), p. 4.

[2] The theory of Heraclitus differs from Bergson's in this that, whereas Heraclitus affirmed a quantitative movement as the ultimate reality, for Bergson the mobile reality is essentially a qualitative one. And by duration he does not understand what we usually understand by the term — a measured period of time or movement — but a sort of a spiritual extension, if I may so call it, in which the past, present, and future interlink and compenetrate into an indivisible flowing unity (cf. *La Pensée et le Mouvant* [Paris: Alcan, 1934], pp. 190-96, and *L'Evolution Créatrice* [Paris: Alcan, 1909], pp. 4-5).

[3] *La Pensée et le Mouvant*, pp. 13-20.

or come out of the One. That is why "the general word for philosophy in the East is *darshana,* which literally means perception or direct vision in the Vedanta."[4] Accepting, therefore, a priori and on a fideistic basis that the only reality is the Absolute, the Vedantist does not consider the Absolute as that which *gives* to multiple things their being and their intelligibility, but as that which "*is* there in beings indivisible and *as if* divided."[5]

Naturally, then, on this supposition the Absolute in a Vedantic theory of creation is very much more than a fundamental postulate; it is necessarily its first premise, its very starting point. In an admirable little essay on Advaita, Father Dandoy makes this very apt observation:

> God for our philosophy is essentially and primarily the First Cause and the Prime Mover. [Its existence and attributes follow] as mediate or immediate conclusions from the existence of our starting point, the world. With the Vedantins matters stand quite differently. The starting point for them is the Supreme, the Absolute. They determine first what the final, the infinite *ens a se et per se* is, and when they have stated His attributes, they try to explain the world in function of Him — or It.[6]

Taking this downward path from God to creatures instead of the upward path from creatures to God, the Vedantin is hard pressed to find a reasonable explanation of the fact of world existence. If, as the Upanishads so clearly say, *sarvam khalu idam Brahma* ("all this is Brahman") and Brahman is *ekameva advitiyam*[7] ("the One without a second"), how can a world really exist? And, what is more, how could it be distinct from an infinite, all-embracing Brahman? On the other hand, there is the world with its loud and persistent evidence, which no amount of fideism could succeed in silencing.

Sankara, perhaps the most powerful thinker India has ever produced, once took this problem into his hands and seriously tried to solve it. He brought to bear upon it all the keenness of his faultless

[4]Manubhai Pandya, *The Intelligent Man's Guide to Indian Philosophy* (Bombay: D. B. Taraporevala & Sons, 1935), p. 1.

[5]*Bhagavad-Gita,* XIII, 16-17. Italics mine.

[6]George G. Dandoy, S.J., *An Essay on the Doctrine of the Unreality of the World in the Advaita* (Calcutta, 1919), p. 2. The whole of the Introduction might very profitably be read to realize how different the starting-point is of Vedantism and Scholasticism. Father Dandoy's comparison of Scholasticism with Molinism, and Vedantism with Banesianism, might call for some qualification (cf. comments of MM. J. Maritain and Lacombe in the French edition of the same under the title *L'Ontologie du Vedânta* [Paris: Desclée de Brouwer, 1932]). But it cannot be denied that the comparison is both original and very suggestive.

[7]Brihadaranyaka Upanishad, II. 4. 6; Mundaka Upanishad, II. 2. 11; Chandogya Upanishad, VII. 25. 2.

logic and, as Father Ledrus points out,[8] was within an ace of a correct solution when, scared by the stern voice of faith – *sarvam khalu idam Brahma* – he refused to push his inquiry any further and, for the sake of saving the exclusive Oneness of the Upanishadic Brahman, abandoned the world to the metamagic of Maya (illusion).

In the twelfth century, about three centuries after Sankara, Ramanuja again took up the time-old problem of the One and the Many. His was an ardent nature which could not brook the cold and silent and impersonal deity of Sankara, which, he rightly thought, crushed all religious sense and *bhakti* ("devotion") in man. Moreover, he found no reasonable justification for the theory of Maya, which unnecessarily mystified the world reality without explaining it. But he too, if did not want to bring down religious censure on his head, had perforce to reckon with the *ekam Brahma* of the Upanishads. His solution was this. There were three real things: God, nature, and souls. Reality, though, was one. How could this be? God, he maintained, was one, but not simple. God had modes[9] which qualified him, nature, and souls. These modes were real and eternal. But they did not divide the unique oneness of Brahman, because they stood in relation to him as the body to the soul of man; they constituted the eternal body of Brahman.[10] Thus the exclusive unqualified One (Kevaladvaita) of Sankara became in the hands of Ramanuja a qualified One or One *with* Many (Vishistadvaita).

A century and a half later, the philosopher of Udipi, Madhava, cried down both Sankara and Ramanuja for having distorted the sense of the Upanishadic text "One without a second." If nature and souls were real, he argued (and of that he entertained no doubt), they should have their own subsistency. If they were merely modes inherent in Brahman they were everything of God and nothing of themselves.[11]

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[8]"Sankara's conclusion is a rejection of the problem, not on the ground of its intrinsic insolubility, but on account of some sort of an extrinsic dogmatic 'limiting adjunct' which left no alternative to the impossible self-evolution of the First Cause. Sankara's solution is therefore not absurd in itself, but rather an elegant escape from the clearly perceived absurdity of the magical immanentist universe of an esoteric tradition" ("Advaita and Creation," *New Review* [Calcutta], 1938, p. 265).

[9]"What the phrase 'without a second,' really aims at intimating is that Brahman possesses manifold powers, and this it does by denying the existence of another ruling principle different from Brahman . . . the text *teaches* Brahman to possess attributes" (Ramanuja Bhashya, I. 1. 1 [*Sacred Books of the East*, ed. Max Müller, Vol. XLVIII, pp. 78ff.]).

[10]"World is the body of Brahman and Brahman the Self of the world" (*ibid.*, p. 93). "Brahman has all sentient and non-sentient things for its body, and constitutes the self of that body" (*ibid.*, II. 1. 9 [p. 422]).

[11]P. Johanns, S.J., *Introduction to Vedanta* ("Light of the East Series," No. 23; Calcutta).

And this was clearly against our vivid experience of their distinctness from God. Besides, how could an imperfect material nature be an attribute of a pure God? Hence Madhava maintained that all three — God, nature, and souls — were eternal subsisting entities. The unity of the reality spoken of by faith was not thereby impaired; for nature and souls, though distinct from God and eternally existing with God, were in their very existence dependent on Brahman; they had a relation of subordination to Brahman, and not, as Ramanuja explained, merely a modal or body-dependence. In other words, the God of Madhava was not One *with* Many, but One *and* Many (*Dvaita,* "duality").

In our own day another interpreter[12] of the Vedantic formula "One without a second" has arisen — Sri Aurobindo Ghose.

Born in 1872 of Bengalee parents, Aurobindo had hardly attained the age of reason when his father, "a confirmed believer in Western civilization,"[13] shipped him off to England with the hope of giving him "an entirely occidental education without any contact with the culture of India."[14] In England Sri Aurobindo was entrusted to the care of an English Protestant family in Manchester. Under the kind care and tuition of Mr. and Mrs. Drewett, Sri Aurobindo was well grounded in Latin and French, in which he became quite proficient.

In 1885, circumstances forcing the Drewetts to leave England for Australia, the young lad of thirteen was sent to Saint Paul's School, London. The headmaster took a fancy to this talented Indian boy and drilled him well in Greek. In five years' time Sri Aurobindo's knowledge of the classics was such that he was able to proceed to King's College, Cambridge. There Sri Aurobindo indulged to his heart's content in poetry, literature, and fiction and did wide reading in the history of ancient, medieval, and modern Europe. He also learned German and Italian sufficiently to read Goethe and Dante in the original and acquired a working knowledge of Spanish. Yet, in spite of all the burden of extra studies, he was able to top the class and secure the prizes for Greek and Latin verse and pass the tripos in the first division.

In 1890 Sri Aurobindo appeared for the Indian Civil Service examination and did credit to his nation by obtaining record marks in Greek and Latin. But having failed to appear for the departmental riding test, he was scored off the list of successful candidates and refused a commission in the Civil Service.

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[12]D. S. Sarma, *The Renaissance of Hinduism* (Benares Hindu Univ., 1944), p. 305.
[13]K. R. Srinivasa Iyengar, *Sri Aurobindo* (Calcutta: Arya Pub. House, 1945) p. 22.
[14]*Sri Aurobindo — A Life Sketch* (Calcutta, 1937), pp. 2-3.

But what the High Commissioner for India refused him, the Gaekwar of Baroda offered him. Accordingly, in 1893, after fourteen years' stay in England, he came down to India and took an appointment in the Baroda State Service. For thirteen years more he stayed at Baroda doing his official work with remarkable efficiency and utilizing whatever spare moments he had to make a thorough study of Indian languages and Indian culture and Indian politics. All this time he was yearning to do something for his country, but how and where and when were questions that still waited for an answer.

It soon came in the shape of the famous Bengal partition agitation in 1905. He left Baroda at once and threw himself into the fray with all the dynamism of his manhood. He became the leader of the extremists in the Congress party, and urged the Indian National Congress to give up its hitherto canine method of agitation for the leonine.

The result was that Sri Aurobindo was prosecuted for sedition in 1907 but was acquitted. A year later he was again put on trial as being implicated in the Alipur conspiracy case and was kept in the Alipur Jail as under-trial prisoner for about a year. This time too, he was acquitted. A third prosecution for libel was launched against him in 1910. But by then he had left British territory and settled down in the quiet French town of Pondicherry. In a statement to the press he said that he had done so not in fear of the law or the police, but in answer to an inner call to a spiritual life of discipline or Yoga.

In 1914, after four years of silent Yoga (spiritual discipline), he began the publication of a philosophical monthly called the *Arya*. The *Arya* ceased publication after six years and most of its articles have since been revised and published in book form, the principal among them being *The Life Divine, Essays on the Gita,* and the *Isha Upanishad.*

Sri Aurobindo at first lived in retirement at Pondicherry with four or five disciples. That little family soon grew into an *asram* ("monastery"). Today the *asram* comprises some hundred big bungalows housing over three-hundred disciples following his method of Yoga and assimilating his philosophy of life.[15]

In his philosophical teachings Sri Aurobindo has no intention of departing from the traditional position of the Vedantin. By his own admission he is first and foremost a Vedantin and not an innovator of a revolutionary philosophy in India. In *The Life Divine* he tells us

[15]Most of this material has been taken from the two biographical sketches mentioned above.

plainly that with the greatest "scruple of right preservation . . . in dealing with the legacy . . . of the Aryan past"[16] he seeks only to give to the ancient Vedic formulae "a larger and completer affirmation."[17]

Moreover, like the orthodox Vedantins, he too would make the Absolute the starting point of his investigation of the origin, nature, and finality of the universe.

> It is then this Something, an Absolute which can be so known that all truths can stand in it and by it and find there their reconciliation, that we must discover as our starting-point and keep as our constant base of thinking and seeing and by it find a solution of the problem; for it is That alone that can carry in it a key to the paradoxes of the universe.[18]

This does not mean, however, that in his search for the Absolute or explanation of the world riddle, Sri Aurobindo slavishly adheres to the path traced by his illustrious forerunners like Sankara and Ramanuja and the rest of the galaxy of Indian philosophers. That he could not do for at least two reasons. He was, first, too much of a critic[19] not to see the defects and shortcomings in the existing systems of Vedanta. Secondly, as he himself owns, his spirit of adventure would not permit him to take the beaten path.[20]

Still, it is not simply a spirit of adventure that has made him take at times a different view of the infinite Brahman. The true reason was a spiritual discontent with the results obtained by his predecessors. Listen to his own words.

> We perceive that in the Indian ascetic ideal the great Vedantic formula, "One without a second", has not been read sufficiently in the light of that other formula equally imperative, "All this is the Brahman". The passionate aspiration of man upward to the Divine has not been sufficiently related to the descending movement of the Divine leaning downward to embrace eternally its mani-

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[16]Ghose, Aurobindo, *The Life Divine* (Calcutta: Arya Pub. House, 1939-40), II, 36.

[17]*Ibid.*, 37.

[18]*Ibid.*, II, 419.

[19]In *Indian Art and Letters*, R.I.S. (London, 1944, first issue, p. 31), under the caption, "A Philosopher of Reconciliation," Mr. Ranjee G. Shahani writes: "On the whole, however, we have, I regret to say, a long line of copyists and sentimentalists. These have merely perpetuated the errors of their forefathers. To-day after a longish interval, India has given us once more a critic of the first order. His name is Aurobindo."

[20]"Our Yoga," observes Sri Aurobindo, "is not a retreading of old walks, but a spiritual adventure" (*Sri Aurobindo Mandir Annual* [August, 1944], p. 6).

> festation. Its meaning in Matter has not been so well understood as Its truth in the Spirit. The Reality which the Sannyasin [ascetic] seeks has been grasped in its full height, but not as by the ancient Vedantins, in its full extent and comprehensiveness.[21]

What, then, is the kernel of Sri Aurobindo's philosophy? How does he propose to read into the Vedic formula "One without the second" a comprehensive notion of the reality which, without prejudice either to orthodoxy or to the evidence of experience, reconciles the One with the Many? Sri Aurobindo was too much of a realist to be tempted to surrender the world reality to the deceptive play of Maya. But he was also too much of a fideist to dare give to the world in the face of the Upanishadic Oneness a reality of existence outside of, and distinct from, the Absolute. Hence with the rest of the Vedantins he too asserts that creation is "Being becoming in form and movement what it already is in substance."[22]

But Sri Aurobindo's departure from the beaten path of the Vedantins, his originality and novel contribution to Vedantic thought, lies in this, that whereas his illustrious predecessors like Sankara, Ramanuja, and Madhava instinctively shrank from polluting the pure and spotless *being* of the Absolute by introducing *becoming* into its essentiality — and therefore tried by every expediency of thought to exclude, subordinate, or at least co-ordinate the Many with the One and Becoming with Being — Sri Aurobindo has fearlessly placed the Many and the Becoming in the very heart and substantiality of the Absolute Being. And that too, not merely as a modal attribute of God, as Ramanuja has done, but as an essential coprinciple of the integral Absolute. Brahman, according to Sri Aurobindo, is not mere unqualified or qualified unity, but an integrality — or, to be more precise, an integral unity of Being and Becoming. The God of Aurobindo is neither Being nor Becoming, but somewhat like the God of Hegel, a transcendental unity of Being and Becoming — or rather, a Being that is in its essentiality an eternal Becoming, "a sort of fundamental blissful dualism in unity."[23]

The Absolute, therefore, according to the "larger and completer affirmation" of the Vedic formula "One without a second," is not One to the exclusion of the Many (Sankara), or One with the subordinate body-attribute of Many (Ramanuja), or One with the co-ordinate quasi-independent Many (Madhava), but One that is essentially the

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[21] *The Life Divine*, I, 36-37.
[22] *Ibid.*, II, 58.
[23] *Ibid.*, I, 225.

basis and source of the Many[24] — a basis not in the sense of merely supporting the Many, but "Brahman is in the essentiality of its universal being a unity and a multiplicity."[25]

There is much in common between this Being-Becoming Absolute of Sri Aurobindo and the pure unity of Brahman, (Suddhadvaita) of Vallabhachari (1479-1531). Vallabha, too, like Aurobindo, affirms that God is a pure unity of difference-indifference: God and the world are one. "While remaining one and the same Reality, God by his power lays himself out in various visibilities, and by becoming visible in one way He becomes invisible in another way."[26] Therefore the Absolute of Vallabha contains in itself implicitly the manifold multiplicity; but the Many are merged into identity with the essence of Brahman, just as all the colors are merged into one identical white ray of light.

But the difference between Vallabha and Aurobindo seems to be that, whereas Vallabha has stressed the becoming solely in the order of visibility — by creating the world God passes from his implicit to his explicit self — Sri Aurobindo includes the becoming aspect in the intrinsic nature of the Absolute: "All capacity is there, the powers of all qualities, features, characteristics are there inherent within it."[27] And they are there, not only as a static and implicit aspect of Brahman, but also as his dynamic aspect, for, he tells us, "all creation is an outward form of the becoming of the Spirit."[28]

Sri Aurobindo maintains that this Absolute, which is an eternal and essential identity of Being and Becoming, is the real God of the "Original Vedanta, not of the schools of metaphysical philosophy, but of the Upanishads."[29] "It was," he adds, "a later impatience of heart and mind . . . which sought the One to deny the Many."[30]

We have not here given a full idea of the nature of God in the philosophy of Sri Aurobindo. That we hope to do in succeeding articles which will be concluded with a critical estimate and an interpretation of his theory. All that we have intended to do in this article is to show the courageous stand Sri Aurobindo has taken against exclusive emphasis on the sole reality of the Absolute and against watering down the reality of the sense world. Instead of taking the easy path of negation or compromise, he has done the right thing in assert-

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[24]*Ibid.*

[25]*Ibid.*, II, 436.

[26]Johanns, *op. cit.*, p. 38. Cf. the same author's *A Synopsis of 'To Christ through the Vedanta,' Part III, Vallabha* ("Light of the East Series," No. 9; Calcutta) p. 3-4.

[27]*The Life Divine*, II, 6.

[28]*Ibid.*, 540.

[29]*Ibid.*, I, 20; *The Ideal of the Karma Yogin*, p. 19.

[30]*The Life Divine*, I, 54.

ing in unqualified terms that both the One and the Many, Being and Becoming, are facts and that true wisdom lies, not in denying the one or the other, but in trying to find the right relation between the two. He may have failed to find a right relation (as we shall show later on); but his philosophical courage in breaking loose from the obscurantist superstition or crude faith of the past in order to find unity in a real multiplicity, harmony in the apparent discord between the One and the Many, gives him a prominent place among the modern thinkers of India.

NOTES AND DISCUSSION

SRI AUROBINDO GHOSE

J. Pasi, S.J.

Sri Aurobindo Ghose, the celebrated Indian philosopher, poet, and dramatist, died on December 5, 1950, in Pondicherry. Born in Calcutta on August 15, 1872, he went to England at the age of seven and lived there for fourteen years. Then he returned to India, where he served in Baroda state for thirteen years. Later he joined the political movement and took an active part in the agitation against the partition of Bengal. Arrested and confined in a solitary cell, he spent almost all his time reading the Gita and the Upanishads, in intensive meditation, and the practice of yoga. Finally brought to trial, he was acquitted. Soon after, learning that the government intended to arrest him again, he left Calcutta for Chandernagore and later, on April 4, 1910, retired to Pondicherry. This marked his retirement from political activity and his turning to the spiritual side of life.

Around him there grew up an ashram, that is, a house, or group of houses, in which a teacher of spiritual philosophy receives and lodges those who come to him for teaching and practice. At his death, the inmates of the ashram numbered about eight hundred. Aurobindo's philosophy is the characteristically Hindu monism of the ancient sages of India, plus the Western idea of evolution as the way in which the One Self of all things liberates itself from matter. The single aim of his yoga is "an inner self-development by which each one who follows it can in time discover the One Self in all and evolve a higher consciousness than the mental, a spiritual and supramental consciousness which will transform and divinize human nature."

MEETING OF THE METAPHYSICAL SOCIETY OF AMERICA

The second annual meeting of the Metaphysical Society of America was held at Barnard College, New York, on February 24. An excellent program of papers gave rise to stimulating discussions.

Professor Paul Tillich of Union Theological Seminary spoke on "Finitude and Some Categories." By "categories" he referred to necessary elements of the structure of mind and of reality. These categories are the forms of finitude. In particular, the categories of time, causality, and substance are proper to finite being. Time, as the central category of finitude, unites the anxiety about transitoriness with the courage based on the presence of being. Causality affirms being by pointing to the cause of the effect, but affirms nonbeing in the effect considered apart from the cause. Courage, then, consists in the acceptance of finite being as contingent. Rather oddly, a stoic form of courage was advocated; perhaps the reason for this stand was Professor Tillich's expressed skepticism about the human soul.

Professor Donald Williams of Harvard University read a paper on "The Myth of Passage." In his four-dimensional materialist universe, time and objects only seem to us to move or pass; in reality, nothing changes; events are merely at different points of the continuum.

Professor George Burch spoke on "The Nature of Life." In the first part of his presentation, he dealt with living things; he defined life as freedom (spontaneity), and vital action as behavior determined by inner structure. Thus, for him, freedom and law are not opposites, but correlatives; freedom is opposed only to external coercion. In the second part of his discussion, Professor Burch investigated the nature of species. He defined species as a class each of whose members is what it is because of its origin from previous progenitors. According to this definition, no species can have an absolute beginning; and this he maintained to be true not only of the natural species of living things, but also of man as rational and man as a believer.

Professor Charles Hartshorne of the University of Chicago read a paper on "Togetherness." Fundamentally, this paper dealt with the idealist analysis of relations. At least one of two relative terms must include the other, if the relation in question is real. But how can we tell which term includes the other? Professor Hartshorne set down as a principle that the more inclusive of the terms is always the positive one. On this basis, he asserted that becoming includes being, rather than that being includes becoming (on the ground that becoming is

positive, while being is not-becoming), and that contingence includes the necessary (for the contingent is positive, while the necessary is the noncontingent).

Professor Jacques Maritain of the graduate school of Princeton University spoke on "Knowledge through Connaturality." Deriving this doctrine from the explanations of St. Thomas Aquinas and John of St. Thomas, he applied it first to the judgment of a virtuous act, then to the explanation of mystical experience and poetic experience. His main concern, however, was to explain the direct knowledge which most men have of the contents of the natural law. These judgments cannot arise from reasoning. Hence they must arise from natural inclinations. The natural inclinations of man are always human, are always to some extent molded by reason at least in a preconscious way, and are essentially historical. That is why ordinary men can have a true and certain indemonstrable knowledge of the principles of the natural law. Hence also the task of the moral philosopher is primarily a reflection upon this connatural knowledge, leading to an analysis and an elucidation of moral standards, completing the connatural knowledge and purifying it of irrational accretions.

At the business meeting which followed the discussion, the first election of officers took place. Professor Paul Weiss, founder and moving spirit of the organization, was elected president. Miss Ellen P. Haring was elected secretary; Constantine Cavernos, treasurer. The four elected councillors are W. H. Sheldon, Iredell Kenkins, W. E. Hocking, and E. S. Brightman. The choice of a time and place for next year's meeting was referred to the president and council.

CHRONICLE

The New Scholasticism celebrates its twenty-fifth year of publication this year. The first issue carries retrospective articles by the Reverend Dr. Charles A. Hart and Professor James Collins, and a forecast for the next twenty-five years by Mortimer J. Adler. THE MODERN SCHOOLMAN wishes to congratulate the review and its editor, Dr. Vincent E. Smith.

The editors of *Philosophical Studies* have announced an essay competition. The essay, of not more than 2500 words, is to be an application of methods of analysis and clarification of meaning. Entrance is

restricted to graduate students (not yet having their Ph.D. or equivalent degree). Entries must be postmarked not later than June 1, 1951. First prize is publication in *Philosophical Studies,* a $50 Government Savings Bond, and a ten-year subscription to the journal. For further particulars, write The Editors, 320 Folwell Hall, University of Minnesota, Minneapolis 14.

The David F. Swenson–Kierkegaard Memorial Fund again offers a fellowship of $500 for the year 1951-52. This fellowship is to be used for the study of Kierkegaard, at any place of study designated by the recipient. An interest in religion and a knowledge of Danish are prerequisites. Applications should be made to the secretary of the Memorial committee, Dr. Paul L. Holmer, Department of Philosophy, 300 Folwell Hall, University of Minnesota, Minneapolis.

Professor Charles De Koninck, dean of the faculty of Philosophy of Laval University, delivered a paper on "Contingence in Hegel and Marx" at the opening meeting of th Société Philosophique de Fribourg.

Nicolai Hartmann died on October 9, 1950, at the age of sixty-eight. At the time of his death, the noted author was professor emeritus of Göttingen.

BOOK REVIEWS

KIERKEGAARD'S PHILOSOPHY OF RELIGION. By Reidar Thomte. Princeton: Princeton Univ. Press, 1948. Pp. 230. $3.50.

In recent times Kierkegaard has come into high intellectual fashion, becoming the hero of a cult. This is a fate which perhaps does not bode well for his permanent reputation and influence. However this may be, it is curious that the current boom has provided so few systematic studies of Kierkegaard's thought, as distinguished from biographical essays. There may be special reasons for this. In the case of Kierkegaard, it might be considered impossible for one of his convinced followers to present a philosophical study of his doctrine apart from his personal life. Can a disciple of the great nineteenth-century prophet of *subjectivity* seek to determine the *objective* truth of the master's teaching? Reidar Thomte has certainly sought to give us in this book a synoptic survey of Kierkegaard's thought as it is exhibited in his writings. But is there a Kierkegaardian *philosophy,* which can be objectively analyzed and critically tested by *philosophic* methods? Thomte seems to think not, in spite of the title of his book and the fact that on occasion he will refer to Kierkegaard's metaphysics. His approach to Kierkegaard is that of a reverent disciple, one who would not dare, or presume, to subject the master's doctrines to the examination of critical intelligence. Indeed, according to Thomte (p. 204), anyone who truly appreciates Kierkegaard, who would desire to furnish a critical estimate of his philosophy, would find himself "standing under judgment." It is in the light of this remark, both absurd and idolatrous, that any critical estimate of Thomte's own book must be made. We must not, therefore, expect from Thomte any independence of judgment or critical reasoning. But neither, of course, can we assume that Thomte's book is a mirror which reflects Kierkegaard's thought without distortion.

The book has, however, many real merits. To a large extent, Kierkegaard is allowed to speak for himself, in a generous supply of quotations. Also, Thomte's knowledge of Danish has enabled him to

give us a number of direct translations from parts of the *Journals* not previously existing in English and to correct certain errors in other translations of key passages of the writings of Kierkegaard. In the early chapters, Thomte expounds the famous doctrine of the stages of life. In the central chapters the transition from natural religion to Christianity is discussed, and the latter part of the book deals with Christianity itself. The central focus is provided by Kierkegaard's great question, "Now I ask myself how I am to become a Christian?" There is thus a commendable emphasis in Thomte upon the major importance of the "religious and edifying discourses," so often neglected by other scholars. Some of the excesses and atheistic perversions of contemporary existentialism might well have been avoided if these Christian discourses had been more widely read and more influential. But even though Thomte recognizes the importance of these documents for the understanding of Kierkegaard, he has not clearly shown us the relations between Kierkegaard's philosophy and his Christianity.

But to return to the question previously raised: Did Kierkegaard really have a philosophy? Strongly influenced by romanticism, and repelled by the "system" of Hegel, he attacks the objective viewpoint of the philosopher and insists upon the superiority of "subjectivity." According to Thomte, he should be regarded as a man with a "life view," not a philosophy. This strikes me as a quibble. It seems evident that the doctrines of self, subjectivity, and existence are parts of a Kierkegaardian metaphysics. It is a non-Hegelian metaphysics, if you like, although even its non-Hegelian character can be overstressed and exaggerated. Kierkegaard's relationship to the Hegelian "system" cannot, it seems to me, be fully understood in terms of repulsion alone. There is also a subtle influence and attraction, which remains to be investigated. The Kierkegaardian opposition of categories of existence and eternal being, and the very concept of the "paradox" itself, all betray signs of Hegelian influence. It is perfectly true that the contingent act of existing has no place in the Hegelian metaphysics, and Kierkegaard was surely right to condemn Hegel on this ground. But must one attack reason and philosophy in order to vindicate the claims of existence? Actually, both Hegel and Kierkegaard are engaged in the same attack upon reason which has been so fashionable, and so disastrous, in the modern world. Although Hegel is often thought of as an "archrationalist" and "essentialist," it must never be forgotten that Hegelian dialectic does not move by the laws of identity, contradiction, and excluded middle, but is founded upon the denial of these principles. The *necessity* of the dialectical movement within the

Hegelian system is certainly not that of reason discoursing upon essences.

Thomte does not give an adequate discussion of the central problem of "existence" in Kierkegaard, particularly in relation to time, history, and eternity. The great prophet of modern existentialism seems often to treat existence with shocking naïveté and ineptitude. Existence in Kierkegaard seems to be inextricable from *time,* which is a philosophic error of the first magnitude. Thomte discusses Kierkegaard's denial of the possibility of any rational demonstration of God's *existence.* But as Dr. James Collins has pointed out (*Thomist,* XII [July, 1949]), Kierkegaard usually speaks only of God's *eternity,* reserving the term "existence" for Christ alone. Collins therefore raises the interesting possibility of a Kierkegaardian demonstration of the *eternal being* of God, as distinguished from his existence. But even this possibility is qualified, as Collins points out, by the influence exercised upon Kierkegaard by the Kantian critique of the Ideals of Pure Reason. The God of Kierkegaard, like the Neoplantonic One, seems to be non-existent, or rather, beyond existence. In neither case does his name seem to be "He Who Is."

For some of the same reasons which affected the Neoplatonists, the doctrine of the Incarnation presents to Kierkegaard a supreme and even radically unintelligible paradox. There is here a crossing of Kierkegaardian categories, an inconceivable meeting of parallels. Certainly Kierkegaard's philosophic doctrines help to generate an atmosphere of almost unbearable tension in his religious life. It is a philosophy which made it peculiarly difficult for Kierkegaard to become a Christian. In Thomte, there is an insufficient indication of Kierkegaard's distinction between modes of existence, a distinction which might help balance Thomte's rather one-sided emphasis in interpretation. Thomte, for example, goes so far as to call the incarnate presence of God in time "unhistorical." But for Kierkegaard there is, surely, in Christ a true synthesis of time and eternity, and Christ is our pattern.

Thomte, like Haecker, does well to draw attention to the radiant beauty of much of Kierkegaard's Christian doctrine. But it is no accident, I believe, that the existentialist movement in our times which derives from Kierkegaard's philosophy, as distinguished from his Christianity, has been mostly anti-Christian and even atheistic. Soren Kierkegaard was a Christian in spite of his philosophy, not because of it.

LEONARD J. ESLICK

Saint Louis University

KREUZESWISSENSCHAFT. By Edith Stein. Louvain: Nauwelaerts; Freiburg: Herder, 1950. Pp. xi + 300. Cloth, $3.30; paper, $2.70 (when ordered with the rest of the series, $2.90; $2.30).

Edith Stein (Teresia Benedicta a Cruce, O.C.D.), pupil and one-time assistant to Edmund Husserl, was prevented from completing this study of the doctrine of St. John of the Cross by her violent death at the hands of the Nazi secret police. This work is the first of a series. Volume II will be *Endliches und ewiges Sein;* III, *Des hl. Thomas von Aquino Untersuchungen über die Wahrheit;* V, *Pädagogische Studien.*

This volume, of course, is important in that it is the work of an important philosophical figure and throws light on the development of her mind and personality. It is also philosophically important in itself, not only to those who are interested in the "philosophy of religion," but to all who are interested in the phenomenological method and its application to various fields and various kinds of reality.

The editors, L. Gelber, of the Archives-Husserl, and P. Romaeus Leuven, O.C.D., have added a short biographical note, a bibliographical critique of the manuscript, and a bibliography.

GEORGE P. KLUBERTANZ, S.J.

Saint Louis University

A HISTORY OF PHILOSOPHICAL SYSTEMS. Edited by Vergilius Ferm. New York: Philosophical Lib., 1950. Pp. xiv + 642. $6.00.

The word *philosophical* here embraces about the range of interests covered by the average American philosophy department, except that no chapter is given to political philosophy (chapters are given to philosophy of science, of religion, of history, of culture) and that five chapters are devoted to Oriental religions. The word *system* is taken to mean "the general trend or course of thought of a particular school or group of thinkers" (p. v). According to our editor, philosophical differences are the product of culture and circumstance (p. 144). His opinion seems to be that the way to philosophical maturity lies not in following out a given system to its conclusion, but in cutting across systems in pursuit of values which "wear the air of the universal" (pp. vii, 606). The editor's point of view does not, however, characterize the volume as a whole. The number of contributors, out of the total of forty-one, who habitually blur distinctions and assimilate diverse ways of thinking to their own (notably Brightman on "Personalism,"

Sellars on "The New Materialism," and Ferm on "Naturalism") is no higher than the national average.

The book is called a *history* doubtless because, from the editor's point of view, the development of a school is the only important thing about it; but by the same token it cannot be a history of "philosophy" but only of "philosophical schools." To the reader it would have made little difference if the contents had been arranged in alphabetical order. The fact is that only that part of the book which traces Western thought from the Greeks to the Hegelians (some two hundred and forty pages) follows any significant chronological sequence.

The account given of Scholastic thought should be generally satisfactory to readers of THE MODERN SCHOOLMAN, being the work of recognized Catholic scholars (Richard J. Thompson, Armand Maurer, Donald A. Gallagher). The article on "Aristotelianism" is by Henry Veatch, who draws heavily from R. P. McKeon and John Wild. Platonism is made over into Hegelian idealism by Jas. H. Dunham — ideas are "ways of thinking" (p. 95); the idea of the Good is "the Genus of Reason operating in the intellect of man and in every other form of excellence in the real world" (p. 105). E. Kullmann has contributed a fresh and penetrating account of Alexandrian philosophy. But St. Augustine is treated of in the article "Early Christian Philosophy" by Editor Ferm, of which the least unkind thing that can be said is that no mention is made of matters as important to subsequent history as St. Augustine's illuminist account of knowledge and his hierarchical arrangement of essences. Pseudo-Dionysius is nowhere discussed.

There is some question who can use this volume. The professional philosopher might keep it by his easy chair for a while and enjoy the many brilliant insights which are sprinkled through it. The graduate student could make good use of it in preparing for comprehensives, particularly in the contemporary area. An index of thirty-one pages increases the book's usefulness for this purpose; but scarcely half of the chapters have any kind of footnotes, and there is no uniform policy with bibliographies. The undergraduate would be ill-advised to purchase the book, although he could profitably be directed to certain articles. With Rodin's "The Thinker" on its jacket, the book obviously makes a bid for the general reader who wants to learn philosophy at home. Philosophy, alas, cannot be learned by the survey method, and the general reader will get little satisfaction here.

J. H. Faurot

Missouri Valley College

In Duodecim Libros Metaphysicorum Aristotelis Expositio. By St. Thomas Aquinas. Edited by M. R. Cathala, O.P. Revised by R. M. Spiazzi, O.P. Turin: Marietti, 1950. Pp. xxiv + 648.

In Librum Beati Dionysii De Divinis Nominibus Expositio. By St. Thomas Aquinas. Edited by Ceslaus Pera, O.P. Turin: Marietti, 1950. Pp. liv + 432.

The first book is a corrected reprint of the well-known edition of Fr. Cathala, O.P. To the advantages of that work have been added more complete synopses and a continuous numbering of the Aristotelian text, which facilitates cross reference.

The new edition of *In Librum Beati Dionysii de Divinis Nominibus Expositio* commends itself for many reasons. It offers the Greek text along with the translation, a new departure in manuals of this sort. It has a historical introduction by Pietro Caramello and a synthesis of the Dionysian doctrine by Carolo Mazzantini. There is a bibliographical note, a list of the changes and corrections introduced into this edition, the usual indices to the Scripture and other *auctoritates,* and an index "elementorum." There is also an index of the *dicta authentica* of Dionysius used by St. Thomas in the *Quaestiones Disputatae et Quodlibetales,* the *Contra Gentiles,* and the *Summa Theologiae.* An appendix contains William of Moerbeke's Latin translation of Proclus's *De Malorum Subsistentia,* considered one of Dionysius's sources.

The editor has added eighty-two textual and historical notes.

George P. Klubertanz, S.J.

Saint Louis University

Philosophical Physics. By Vincent Edward Smith. New York: Harper & Bros., 1950. Pp. xvi + 472. $4.00.

We should all be grateful to Dr. Smith for having written *Philosophical Physics,* in which he treats of that much-neglected philosophical science, the philosophy of nature. The first reason for gratitude is the present lack of good books dealing with the philosophical contemplation of nature.

Dr. Smith divides his book into two parts. The first of these deals, with proper attention to modern circumstances, with the matters treated principally in the first three books of Aristotle's *Physics.* This part is designed for courses in the lower division and should serve as a useful introduction to the problems of natural philosophy.

The second part, by far the lengthier, takes up some of the prob-

lems of the general study of mobile being, with particular attention to the distinction between empiriological and philosophical physics. Here, Dr. Smith's own grasp of empiriological physics is used to great advantage. Dr. Smith has set an example for others to follow, insofar as his discussion of the problems indicates clearly the necessity for those who would discuss the empiriological sciences philosophically of knowing those sciences at first hand. Another lesson to be learned from Dr. Smith is that the philosopher of nature must necessarily content himself with poverty, because of the very nature of the human intelligence. For him there should be no hankering after the fleshpots of empiriological sciences. As for the attitude of a pompous "Science has conclusively proved that . . . ," the less said the better. At all times and in all places men have a very precarious hold upon the conclusions of philosophical science.

Two valuable aspects of Dr. Smith's book are (*a*) the inclusion of some discussion of the problems of the principles of mathematics and (*b*) the discussion of the first cause of movement. As regards the mathematical problems, while these do not obtain formal treatment in the philosophy of nature, yet the philosopher of nature can better treat of the species of quantity by drawing upon the philosophy of mathematics. Dr. Smith gives a most interesting account of the mathematical numbers and of the mathematical continuum, in a context dealing with the problem of the actual infinite. But, as far as the philosophy of nature is concerned, he misses an opportunity, in my opinion, in not treating at some length the concrete numbers which are formally within the formal object of the philosophy of nature. As regards the proof of a first mover, Dr. Smith should be congratulated for having restored this proof to its proper place in the philosophy of nature. A philosophy of nature which fails to reach a supreme cause of mobile being is an incompleted philosophy of nature.

It is to be hoped that Dr. Smith, who has met immediate classroom needs by writing the present book, will now meet that more fundamental need for a full-scale treatise on mobile being. *Philosophical Physics* contains, for example, no treatment of the problem of the multiplicity and specificity of mobile being, which yet remains the initial problem of the philosophy of nature. Nothing much has been done on this problem in our own times, in spite of all the bother about species at the beginning of the last decade, the only result of which was to litter the ground with red herrings. The true dialectic of the natural philosopher is not an arid juggling with hypothetical theses. May Dr. Smith give us a wholly technical treatise on mobile

being, addressed to those who seek to know "the cause on which the fact depends."

In the meanwhile, the present volume will be useful to those teachers who wish to refer students studying metaphysics without having studied the philosophy of nature to a readable introduction to the problems of mobile being. As a textbook for use in courses in the philosophy of nature, it meets part of the need and should prove useful, provided that the instructor is himself proficient in the two species of physics.

BRIAN COFFEY

Saint Louis University

ALBERT EINSTEIN: PHILOSOPHER-SCIENTIST. Edited by Paul Arthur Schilp. Evanston: Lib. of Living Philosophers, 1949. Pp. xvi + 781. $8.50.

OUT OF MY LATER YEARS. By Albert Einstein. New York: Philosophical Lib., 1950. Pp. viii + 282. $4.75.

ALBERT EINSTEIN. By Leopold Infeld. New York: Chas. Scribner's Sons, 1950. Pp. viii + 132. $2.00.

The Einstein volume in "The Library of Living Philosophers" is perhaps the most valuable of the volumes edited by Dr. Schilp. No library used by students of philosophy can afford to be without it.

The most valuable feature of the volume is the German text, accompanied by an English translation by Dr. Schilp, of Einstein's *Autobiographisches*. This clear account of its eminent author's intellectual formation and developed activity as a theoretical physicist cannot but delight historians of science and those whose business it is to study the epistemological problems which arise in any fruitful consideration of the scientific method and the notion of science. Dr. Einstein's lucid description of the mental processes through which he advances towards his scientific judgments adds considerably to the documentary materials for the study of the psychology of the scientist. What he has to say on the matter takes its place alongside the contributions of, amongst other great men, Henri Poincaré and Michael Faraday.

The autobiographical pages are followed by twenty-five essays by eminent living scientists and philosophers who discuss fairly exhaustively the various aspects of Einstein's achievements. As far as historians and philosophers of science are concerned, the essays by De Broglie, Pauli, Bohr, Milne, and Lemaître have the value of first-hand source material for the comprehension of the relativity theory. Among the other essays, those by Frank and Reichenbach are especially

valuable because of the light they shed upon the positive side of logical positivism. Philosophers have been quite right in dealing thoroughly with the negative, antimetaphysical theses of logical positivism; but it should not be forgotten, in the interests of wise judgment, that logical positivism was also inspired by the positive aim of clarifying scientific concepts and that it has achieved valuable results in this field.

From one aspect or another, all the essays in the volume are valuable; in fact, the volume, taken as a whole, would make excellent required reading for seminars devoted to the study of the scientific method. Attendance at such seminars should of course be required of all graduate students in philosophy, because those who would reach the perfection of the philosophical activity must necessarily wish to master the philosophical problem of science.

The essays are followed by Dr. Einstein's reply, in which he clears up a number of points of possible or actual misunderstanding and indicates his present positions. The limitations of the philosopher-scientist are apparent in the scant treatment religious ideas receive in the book.

The volume is completed by what is the most complete bibliography of Einstein's works at present existing.

The materials collected in *Out of My Later Years* include extracts from Dr. Einstein's writings from 1934 to 1950. There are a number of passages of scientific interest, which deal, in a popular manner, with aspects of relativity theory. There are also extracts from addresses, letters, and so on, which reveal the social, political, and humanistic sides of Einstein's activity. Much of the material thus presented would have better been left where it lay. I can see no usefulness whatever in reprinting an after-dinner address in which Einstein tells us that Maimonides was a great thinker. The book contains many expressions of Dr. Einstein's political pacifism, which are interesting as illustrations of a point of view. It remains true, however, that the political utterances of a great scientist do not obtain what value they may have from the fact that they are the utterances of a great scientist, though they may have intrinsic merit, when measured against the political reality.

Dr. Infeld's little book is readable, entertaining, and informative up to a point. It should give the public, however, a rather distorted view of the relativity theory. One finds it hard to understand how a physicist of Dr. Infeld's competence can write: "How otherwise could we interpret the *fact* that no body can be accelerated to a velocity greater

than that of light?" (p. 40; italics mine). Derivatives of assumptions cannot be identified with facts, if one wishes to reason correctly.

BRIAN COFFEY

Saint Louis University

SCIENTIFIC AUTOBIOGRAPHY AND OTHER PAPERS. By Max Planck. With a Memorial Address on Max Planck by Max von Laue. Translated from the German by Frank Gaynor. New York: Philosophical Lib., 1949. Pp. 187. $3.75.

It is always interesting and instructive to enter into the deepest thoughts about the ever-persistent problems of man in the universe. Especially is this true when the man speaking is an outstanding scientist such as Max Planck, the founder of the quantum theory. In a series of five essays given at various times, Planck first writes his scientific autobiography and then attempts to answer the perennial questions about the real problems of science, the limits of exact science, causality in physics, and the compatibility of religion and science. Max von Laue, the great X-ray crystallographer, introduces the book with the memorial address he gave at Planck's funeral. The titles of the essays are "A Scientific Autobiography," "Phantom Problems in Science," "The Meaning and Limits of Exact Science," "The Concept of Causality in Physics," and "Religion and Natural Science."

The autobiography is an interesting and revealing document of the ways in which a major new theory takes shape, as well as of the amusing and at times petty clashes of personality that occur even among great scientists. At one place Planck remarks: "A new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it." Apparently, objective truth has a hard time penetrating even minds that are supposedly immune to personal feeling in matters scientific. On the whole, Planck's story is brief, human, and appealing; it gives us a glimpse into the real life work of a great investigator of nature.

However, it is in the last four essays that Planck seriously attempts to find a philosophical world view. The mind-body problem and free will *vs.* causality are two phantom problems, says the author. They are resolved simply by stating that the conflict arises in each case from two legitimate but different points of view. In the former, the psychological viewpoint treats of mental states and the physiological of physical ones; while in the latter the mind, if viewed from without, is causally determined, but is free if viewed from within. Likewise, the opposi-

tion between science and religion is not real, since both strive for the same goal, but by different methods. The real difficulty in all cases arises from a confusion of methods. The ultimate reality for science is made up of the constants of nature, whereas in religion and ethics the absolute is probity to oneself and one's conscience. The goal of both is the recognition of the omnipotent intellect ruling the universe. It is not too clear whether Planck considers God distinct from nature. At times he speaks as though there were a distinction, but later he says, "Nothing stands in our way . . . from identifying with each other the two everywhere active and yet mysterious forces: the world order of natural science and the God of religion."

The author looks upon science as being essentially the regulator and systematizer of heterogeneous experience, and he distinguishes between the world of sense and the world of science. The latter is gradually becoming less intuitive and more remote from that of sense and is approaching — we might say asymptotically, to use a mathematical term — the absolute or metaphysical world picture. The latter is never realizable by man — and indeed it is fortunate that it is not, since the attainment of it would extinguish wonder and bring a halt to the progress of knowledge. It is by the notion of object that the scientific picture is built up out of the manifold of sense experience. Causality seeks to predict events in the world of sense, but quantum mechanics has shown that this cannot be done. Yet the principle of causality still holds even in quantum mechanics, Planck says, though its translation from the scientist's world view to that of naîve sense is uncertain. The ideal intellect, on the other hand, he holds can predict to the actual world of sense. This intellect, however, is not knowable by science but by the faith in a rational world order.

In the final essay, on science and religion, Planck definitely rejects miracles, though he deplores the attempt of the atheist movement to make science speak in the same language that irreligion does. After examining the genuine religious attitude and the enduring results of science, he comes to the conclusion that science and religion are compatible, since both hold for an objective order and an intelligent power behind things, though their respective methods of arriving at this result are different. Planck combats all thoroughgoing positivism and relativism and holds for a reality independent of the human mind. Finally, he feels that the law of least action above all other physical laws gives evidence of finality in the operations of nature. In its ultimate aspects, however, reality is unknowable by man. His conclusion is that science and religion supplement one another.

It is with mixed feelings that one reads these noble essays of a great man. There is nothing specifically Christian about Planck's religion; in fact, it is a type of deism, one that a sober scientist of Planck's temperament would seem to need to complement on the sentimental side the world picture that the extension and generalization of scientific knowledge seem to demand. His ethic is Kantian, pious, and rather austerely lofty. His God is really the unknown X behind nature, or perhaps is the unknowable ultimate of nature. Religion is science masked as a noble endeavor, an aspiration towards something higher, a belief in a unifying intelligent force behind all things; but its God is known only by sentiment. The philosophy of Planck suffers from a lamentable subjectivism and his solutions to some of the phantom problems seem too pat. After all, there would not be such long-continued argument about them if they reduced to a mere difference of viewpoint. The essays are well worth reading even though some of their methods and conclusions are unacceptable both philosophically and theologically. They reveal the pitfalls latent in the univocal extrapolation of scientific methods to all reality and perpetuate the chasm between religion and science by denying religion the use of reason and by reducing its activities to a sentimental belief. In this way the divorce between religion and science is made explicit and perpetual. This state of affairs might be the next best thing for some, but it is not likely to satisfy many.

William M. Kegel, S.J.

Saint Louis University

Spinoza Et Le Pantheisme Religieux. By Paul Siwek, S.J. New edition. Paris: Desclée de Brouwer, 1950. Pp. xxxiv + 309.

This is the revised edition of a study of Spinoza first published in 1937. The revision contains some minor corrections and a few developments and clarifications. Particular account is taken of the recent works of Léon Dujovne and H. A. Wolfson; the latter's interpretation of Spinoza is studied in some detail. The bibliography (pp. xxiii-xxxiv) has been brought up to date.

George P. Klubertanz, S.J.

Saint Louis University

BIBLIOGRAPHY OF CURRENT PHILOSOPHICAL WORKS

PUBLISHED IN THE UNITED STATES

For the purposes of this bibliography, "philosophy" will be understood in a very broad sense. It will include works in other fields — such as sociology, aesthetics, and politics — that involve philosophical principles and problems.

"Current" books will be understood to include new books, revised editions, and reprints if the previous printing had been out of stock for a notable period of time, or if there is a notable difference in price, format and the like.

The procedure is as follows:

1. *Books announced for publication will be listed in the issue which next appears after the announcement is received.*
2. *Books actually published will be listed in the subsequent issue, even though they were already listed in accordance with No. 1 above.*
3. *Books received by* THE MODERN SCHOOLMAN *will be listed with full bibliographical information and a descriptive and/or critical note in the subsequent issue, even though they were already listed in accordance with No. 1 and/or No. 2. This will be done even if a full review is to appear later.*

ABELSON, PAUL. *The Seven Liberal Arts.* New York: Peter Smith, 1950. Pp. 150. $2.50.

ALLPORT, GORDON WILLARD. *The Nature of Personality.* Cambridge: Addison-Wesley Press, 1950. Pp. 227. $2.50.

Ante-Nicene Fathers, The. Edited by Drs. Roberts and Donaldson. Reprint of the Edinburgh edition. Grand Rapids: Eerdmans Pub. Co., 1950. 10 vols. $6.00 per vol.

ARISTOTLE. *Aristotle's Constitution of Athens, and Related Texts.* Translated from the Greek by Kurt von Fritz and Ernst Kapp. ("Hafner Library of Classics," No. 13.) New York: Hafner Pub. Co. Pp. 245. $2.50; paper, $1.25.

AUROBINDO, SRI. *Essays on the Gita.* New York: Sri Aurobindo Lib., 1950. Pp. 608. $5.75.

————. *The Human Cycle.* New York: Sri Aurobindo Lib., 1950. Pp. 320. $3.50.

————. *The Ideal of Human Unity.* New York: Sri Aurobindo Lib., 1950. Pp. 352. $3.50.

————. *The Synthesis of Yoga.* New York: Sri Aurobindo Lib., 1950. Pp. 320. $3.50.

Avicenna on Theology. Introduction by Sir Richard Windstedt. Hollywood-by-the-Sea, Florida; Transatlantic Arts; spring, 1951. $1.00.

BARNES, W. H. F. *The Philosophical Predicament.* Boston: Beacon Press; April, 1951. $2.50.

BARON, SALO W.; NAGEL, ERNEST; and PINSON, K. *Freedom and Reason.* Glencoe, Ill.: Free Press. $5.00.

BEARDSLEY, MONROE C. *Practical Logic.* New York: Prentice-Hall, 1950. Pp. 598. $5.00; text ed. $3.75.

BERGSON, HENRI LOUIS. *Time and Free Will.* Translated from the French by F. L. Pogson. New York: Macmillan Co., 1950. Pp. 279. $2.75.

Bhagavad-Gita or The Lord's Song. Translated by Lionel D. Barnett. Boston: Beacon Press; March, 1951. $1.00.

Bluck, R. S. *Plato's Life and Thought.* Boston: Beacon Press; May, 1951. $2.50.

Brightman, Edgar S. *An Introduction to Philosophy.* Revised ed. New York: Henry Holt & Co.; spring, 1951.

Brown, G. Burniston. *Science, Its Method and Philosophy.* New York: W. W. Norton Co.; April, 1951. $3.50.

Burch, George Bosworth. *Early Medieval Philosophy.* New York: King's Crown Press, 1951. Pp. viii + 142. $2.25.

Five philosophers are considered in the five chapers of this book — Scotus Erigena, St. Anselm of Canterbury, Peter Abelard, St. Bernard of Clairvaux, and Isaac of Stella. In each instance, the chapter begins with a short biographical sketch, then presents certain points of thought with a close reliance on primary sources (as the careful notes indicate). A selected bibliography and a detailed index increase the usefulness of the book.

In general, the interpretations and summaries are characterized by understanding and accuracy. There are a few inaccuracies, which seem to arise from an attempt to express medieval problems in modern terms. Thus, the nature of Erigena's "rationalism" (pp. 6-7, 120) is somewhat exaggerated; his "pantheism" (pp. 17-20) is not sufficiently distinguished from that of modern pantheists. Two summaries (pp. 30 and 44-47) show some uncertainty and confusion of expression in describing the relations of faith and understanding.

Buswell, J. Oliver, Jr. *The Philosophies of F. R. Tennant and John Dewey.* New York: Philosophical Lib., 1950. Pp. xvii + 516. $6.00.

This thesis considers and criticizes the empirical methods of Tennant and Dewey. The philosophies are expounded topically, under the headings of psychology, epistemology, and metaphysics. Though the discussion ranges far afield, the main point that the author wishes to make concerns the exclusion, on a purely a priori basis, of all empirical evidence concerning the existence of God. The author has no difficulty in showing that such biased procedures are not in harmony with a truly empirical approach.

The investigation of the pertinent works of Tennant and Dewey is painstaking and thorough. The criticism is usually to the point, though sometimes it loses its value through a confused and diffuse presentation. Many rather serious historical misinterpretations occur incidentally (for example, the treatment of the Augustinian statement that evil is a privation [pp. 221-22]).

There are a bibliography and an index.

Butterfield, Herbert. *The Origins of Modern Science: 1300-1800.* New York: Macmillan Co.; January, 1951. $3.00.

Carlyle, R. W., and Carlyle, A. J. *History of Medieval Political Theory of the West.* New York: Barnes & Noble, 1950. 6 vols. $35.00.

Conant, James B. *Science and Common Sense.* New Haven: Yale Univ. Press, 1951. Pp. xii + 371. $4.00.

This book is a development of the author's earlier *On Understanding Science.* Almost everyone has some information about science; this book does not aim at increasing their store of such information. Its direct aim is to help the educated citizen to grasp what science is and how scientists work. The method is sound and readily followed: after three introductory chapters in which the basic ideas are introduced, the reader is confronted with a series of well-chosen illustrations of science in the making. The book closes with an indication of the relevance of science for every citizen.

There is a selected bibliography and an index. [*To be reviewed*]

De Wulf, Maurice. *Art and Beauty.* Translated by Sister Mary Gonzaga Udell, O.P. St. Louis: B. Herder Book Co., 1951. Pp. ix + 213. $3.00.

This is a translation of a series of lectures delivered and published shortly after the first World War and revised in 1943. Though the style of the lectures is rather popular than learned, the eminence of the author and the scarcity of Thomistic writings on the philosophy of beauty and the arts make

the book important. In view of the undeveloped state of the subject, it is unfortunate that so large a part of the book is devoted to the consideration of diverging views. However, even from these discussions some positive treatments emerge.

The translation is adequate. There is an index. [*To be reviewed*]

DUCKETT, ELEANOR SHIPLEY. *Alcuin, Friend of Charlemagne: His World and His Work.* New York: Macmillan Co.; April, 1951. $5.00.

DURKHEIM, EMILE. *Suicide.* Glencoe, Ill.: Free Press. $5.00.

EINSTEIN, ALBERT. *The Meaning of Relativity.* 3d. ed. revised. Princeton: Princeton Univ. Press, 1950. Pp. 162. $2.50.

FAIRCHILD, HENRY PRATT. *The Prodigal Century.* New York: Philosophical Lib., 1950. Pp. xvii + 258. $3.75.

This is an analysis of the opportunities and failures of the nineteenth century. The author points out how many of the opportunities have been muffed, but believes that enough of the inheritance remains to ensure a satisfactory future for mankind.

The failures and the misuse of the opportunities are found by the author to flow from lack of restraint and from false or conflicting philosophical (and sometimes religious) ideals. Among the suggestions that he offers are that we should develop a consumer-orientated economy, a type of education that includes extensive preparation for the proper use of leisure, some kind of limitation of population increase, and collective ownership of productive facilities. Ethicians as well as sociologists and economists will find stimulation in reading these discussions.

————. *Versus: Reflections of a Sociologist.* New York: Philosophical Lib., 1950. Pp. xvii + 203. $3.75.

This volume is a selection of essays that appeared in various magazines between the years 1919 and 1937. Though the various papers deal with economic or sociological subjects, they are filled with philosophical reflections. Students of moral philosophy will find instructive material and some challenges to serious thinking.

There is a brief introductory foreword by Donald Young.

FISCH, MAX H. (ed.). *Classic American Philosophers.* New York: Appleton-Century-Crofts, 1951. Pp. x + 493. $4.75.

The American philosophers, selections from whose works appear in this volume, are Peirce, James, Royce, Santayana, Dewey, and Whitehead. The selections are either articles or chapters, chosen to illustrate the main contributions of each of these thinkers.

The general editor, Professor Fisch, has written a general introduction to the group of thinkers. In addition, a short introduction precedes each group of selections. The introduction to Peirce was written by Arthur W. Burks; to James, by Paul Henle; to Royce, by Otto F. Kraushaar; to Santayana, by Philip Blair Rice; to Dewey, by Gail Kennedy; and to Whitehead, by Victor Lowe. An appendix gives suggestions for further reading. [*To be reviewed*]

FRANK, LAWRENCE K. *Nature and Human Nature.* New Brunswick: Rutgers Univ. Press; March, 1951. $3.00.

GARDINER, HAROLD C., S.J. (ed.). *A Christian Appraisal.* Vol. III. New York: Devin-Adair Co.; February, 1951. Pp. 176. $2.75.

General Interim Report of House Select Committee on Lobbying Activities. Washington: Govt. Printing Office, 1950. Pp. 67. 20c.

GILLISPIE, CHARLES COULSTON. *Genesis and Geology.* Cambridge: Harvard Univ. Press; April, 1951. $4.50.

GILSON, ETIENNE. *Heloise and Abelard.* Chicago: Henry Regnery Co.; March, 1951. $3.00.

GIRVETZ, HARRY K. *From Wealth to Welfare.* Stanford: Stanford Univ. Press, 1951. $5.00.

GOODMAN, NELSON. *The Structure of Appearance.* Cambridge: Harvard Univ. Press; Feb., 1951. $4.00.

GUTHRIE, W. K. C. *The Greeks and Their Gods.* Boston: Beacon Press; April, 1951. $3.75

HALLOWELL, JOHN H. *Main Currents in Modern Political Thought.* New York: Henry Holt & Co., 1950. Pp. 759. $4.25.

HARTNOLL, PHYLLIS. *The Oxford Companion to the Theatre.* New York: Oxford Univ. Press; May, 1951. $7.50.

HASTINGS, JAMES. *Encyclopedia of Religion and Ethics.* 6 vols. and index. New York: Chas. Scribner's Sons. $85.00 per set. In preparation.

HEARD, GERALD. *Morals Since 1900.* New York: Harper & Bros., 1950. Pp. 223. $3.00.

HILBERT, D., and ACKERMAN, W. *Principles of Mathematical Logic.* New York: Chelsea Pub. Co., 1950. Pp. xii + 172. $3.50.

HOBBS, A. H. *Sociology at the Crossroads.* Chicago: Henry Regnery Co.; May, 1951. $5.00.

HOYLE, FRED. *The Nature of the Universe.* New York: Harper & Bros., March, 1951. $2.50.

HUNT, R. N. CAREW. *The Theory and Practice of Communism.* New York: Macmillan Co., 1951. Pp. 232. $3.00.

ISHERWOOD, CHRISTOPHER. *Vedanta for Modern Man.* New York: Harper & Bros.; June, 1951. $4.50.

JEFFERY, GEORGE B. *The Unity of Knowledge.* (Third Arthur Stanley Eddington Memorial Lecture, November 1, 1949) New York: Cambridge Univ. Press, 1950. Pp. 71. Paper, $1.00.

JORGENSEN, JORGEN. *The Development of Logical Empiricism.* Chicago: Univ. of Chicago Press; March, 1951. $1.25.

KANT, IMMANUEL. *Foundation of the Metaphysics of Morals.* (This reprint also includes *What Is Enlightenment?* and a short passage from the *Metaphysics of Morals.*) Translated by Lewis White Beck. Chicago: Univ. of Chicago Press, 1950. Paper, 75c.

KATZ, JOSEPH. *Plotinus' Search for the Good.* New York: King's Crown Press, 1950. Pp. ix + 106. $2.50.

This brief study is an attempt to explain and even make "plausible" (p. 46) the thought of Plotinus to modern readers. The author admittedly neglects the Plotinian system of ideas (which others have treated, he thinks, fully enough) in favor of an attempt to get at the problems. In his opinion, the difficulty with Plotinus is that he has not clearly distinguished "existential and valuational considerations" (p. vii) — in other words, that he has asserted his ideals to be real existents. If this is the "key" which is to make a difficult author simple and clear, let it be said that the clarity is but specious, tending to generate a deceptive misunderstanding. In spite of this over-all defect of interpretation, there are some excellent particular insights.

KIRK, RUDOLF. *The Moral Philosophie of the Stoicks.* New Brunswick: Rutgers Univ. Press; June, 1951. $3.50.

LAKY, JOHN JOSEPH. *A Study of George Berkeley's Philosophy in the Light of the Philosophy of St. Thomas Aquinas.* Washington: Catholic Univ. of America Press, 1950. Pp. ix + 129. Paper, apply.

The central point of this doctoral dissertation is an examination of Berkeley's theory of abstraction, universals, and being and theodicy in comparison with, and criticized according to, the philosophy of St. Thomas. This investigation is preceded by a consideration of the works of Berkeley and of his philosophical sources. It is strange that Berkeley is considered to have had an adequate understanding of the "scholastic doctrine of abstraction" (whatever that is).

LANDAU, EDMUND. *Foundations of Analysis.* New York: Chelsea Pub. Co., 1951. $3.25.

LEIBNIZ, GOTTFRIED WILHELM, FREIHER VON. *Leibnitz: Selections.* Edited by Philip F. Wiener. New York: Chas. Scribner's Sons, 1951. $1.75.

LEMAÎTRE, CANON GEORGES. *The Primeval Atom.* Translated by Betty H. and Serge A. Korff. Preface by Ferdinand Gonseth. Foreword to the English edition by Henry Norris Russell. New York: Van Nostrand, 1950. Pp. ix + 186. $3.00.

The cosmogonic hypothesis of a single primitive atom was first formulated by Canon Lemaître in 1931. Successive papers have developed this idea, so that now it is one of the most comprehensive and important of the original hypotheses of theoretical physics.

Although this is not a philosophical treatise, it is of great importance for the philosophy of nature. And it is, incidentally, a fascinatingly interesting book even for the well-educated general reader. [*To be reviewed*]

LODGE, RUPERT. *The Great Thinkers.* Boston: Beacon Press; April, 1951. $3.00.

LOWE, VICTOR., and OTHERS *Whitehead and the Modern World.* Preface by A. Cornelius Benjamin. Boston: Beacon Press. Pp. 64. $1.50.

MACHIAVELLI, NICCOLÓ. *The Discourses of Niccoló Machiavelli.* Translated from the Italian by Leslie J. Walker. 2 vols. New Haven: Yale Univ. Press, 1950. Pp. 698; 395. $15.00.

MAQUET, JACQUES J. *The Sociology of Knowledge. Its Structure and Its Relation to the Philosophy of Knowledge.* Translated by John F. Locke. Preface by F. S. C. Northrop. Boston: Beacon Press; May, 1951. $4.00.

MARCEL, GABRIEL. *Being and Having.* Boston: Beacon Press; May, 1951. $2.25.

————————. *Mystery of Being: I. Reflection and Mystery.* Chicago: Henry Regnery Co.; Feb., 1951. $3.75.

MARITAIN, JACQUES *Man and the State.* Chicago: Univ. of Chicago Press, 1951. Pp. x + 219. $3.50.

M. Maritain, already well known for his contributions to moral and political philosophy, adds an important discussion of the bases of political theory, especially of democracy. He begins with a clarification of the basic concepts of community, society, nation, body politic, and state. Succeeding chapters deal with sovereignty, the problem of means, the rights of man, the democratic charter, church and state, and the problem of world government. [*To be reviewed*]

MAYER, FREDERICK. *A History of Modern Philosophy.* New York: American Book Co., 1951. Pp. xii + 657. $5.25.

This is a textbook of the history of modern philosophy from the Renaissance to the present time. The author tries to present philosophical thinking in the context of its social origin and background; though he is aware of the dangers of reductionism and historicism (pp. 3-4). Such a task is obviously very difficult. Perhaps because he set himself too inclusive a task he frequently makes sweeping statements and hasty generalizations, especially in the introductory sketch of the general background and in the summaries.

A detailed index and a selective bibliography are provided. Scarcely a mention is made of any of the Oriental philosophers. [*To be reviewed*]

MCQUADE, FRANCIS P. *A Philosophical Interpretation of the Contemporary Crisis of Western Civilization.* Washington: Catholic Univ. of America Press, 1950. Pp. xvi + 134. Paper, apply.

This doctoral dissertation ("Philosophical Series," No. 112) deals with the nature, the causes, and the destiny of the present crisis. In the first part the author concludes that the crisis is an outcome of the philosophy of disorder, by which he means an inversion of moral and metaphysical values. In the second part he considers the interpretations of the origin of the crisis according to optimism, pessimism, and realism (the recognition of man's freedom). In the third part he treats the destiny of the crisis according to monistic

philosophies and Thomistic philosophy. There is a suggestive, rather helter-skelter bibliography.

Meaning and Interpretation. Lectures delivered before the Philosophical Union of the University of California, 1948-49. Berkeley: Univ. of California Press, 1950. Pp. 358. Paper, $4.50.

Mediaeval Studies. Vol. XII (1950). Toronto: Pontifical Institute of Mediaeval Studies, 1950. Pp. 324. $7.00.

In addition to important historical and literary studies, this volume contains a number of very valuable articles on philosophy and theology. Two critical texts are presented. Dom Odon Lottin, O.S.B. has edited the *De Virtutibus et de Vitiis et de Donis Spiritus Sancti* of Alan of Lille together with a short introduction. The Reverend J. T. Muckle, C.S.B., has edited a critical edition of Abelard's "Letter of Consolation to a Friend" (*Historia Calamitatum*).

The Reverend Peter W. Nash, S.J., adds to our knowledge of Giles of Rome and the influence of the Boethian tradition with a brilliant and well-documented study, "Giles of Rome on Boethius' 'Diversum est esse et id quod est.'" The late Monsignor Martin Grabmann summarizes what is now known about the twelfth century's acquaintance with Aristotle in "Aristoteles in zwoelften Jahrhundert."

Among the shorter notes, there are two by the Reverend Armand Maurer, C.S.B., that are philosophically and historically important: *"Ens diminutum:* a Note on its Origin and Meaning," and "Siger of Brabant and an Averroistic Commentary on the *Metaphysics* in Cambridge, *Peterhouse Ms."*

MILL, JOHN STUART. *Mill on Bentham and Coleridge.* Introduction by F. R. Leavis. New York: George W. Stewart Pub.; Jan., 1951. Pp. 182. $2.50.

MISCH, GEORG. *The Dawn of Philosophy.* Cambridge: Harvard Univ. Press; Feb., 1951. $4.50.

MORE, THOMAS. *Utopia and a Dialogue of Comfort against Tribulation.* New York: E. P. Dutton & Co.; March, 1951. 95¢.

MUKERJEE, RADHAKAMAL. *The Social Structure of Values.* New York: Macmillan Co., 1950. Pp. 418. $2.75.

MULLAHY, PATRICK. *Oedipus — Myth and Complex.* Introduction by Erich Fromm. New York: Hermitage House. $5.00.

NATHANSON, JEROME. *John Dewey.* New York: Chas. Scribner's Sons; April, 1951. Pp. 130. $2.00.

Nicene and Post-Nicene Fathers of the Christian Church. First and Second Series. Edited by Philip Schaff and others. Grand Rapids: Eerdmans Pub. Co., 1950. Each series, 14 vols. $6.00 per vol.

OTIS, LOUIS-EUGENE. *La Doctrine de l'Evolution.* Montreal: Editions Fides, 1950. Vol. I, pp. 211; vol. II, pp. 263.

OWENS, JOSEPH, C.SS.R. *The Doctrine of Being in the Aristotelian Metaphysics.* Introduction by Etienne Gilson. Toronto: Pontifical Institute of Mediaeval Studies; Feb., 1951. Pp. 400. $5.00.

PERRY, RALPH BARTON, and OTHERS *Modern Education and Human Values.* (Pitcairn-Crabbe Foundation lecture series, Vol. 3). Pittsburgh: Univ. of Pittsburgh Press, 1950. Pp. 121. $3.00.

PERSONS, STOW (ed.). *Evolutionary Thought in America.* New Haven: Yale Univ. Press, 1950. Pp. x + 462. $5.00.

This series of essays by well-known professors is divided into two parts. Part I consists of three essays presenting some aspects of the science and philosophy of evolution. Part II shows the influence of evolutionary thought upon many fields — sociology, political thought, economics, psychology, literature, architecture, moral philosophy, and theology. Each essay is well-documented, and there is an index. [*To be reviewed*]

PESTALOZZI, HEINRICH. *The Education of Man. Aphorisms.* Translated by Heinz and Ruth Norden. With an Introduction by William H. Kilpatrick. New York:

Philosophical Lib., 1951. Pp. xii + 93. $2.75.

Sentences and short paragraphs taken from various writings are gathered under various headings — mankind and humanity, the individual, home and hearth, the education of man, man among men, of poverty the sacred, justice and liberty, truth and wisdom, chips and shavings, nature, the world and God. It is to be hoped that this abbreviated presentation will induce hurried and harried educational theorists to read Pestalozzi rather than invoke his authority blindly.

The very brief Introduction by Professor Kilpatrick includes some biographical data and points out Pestalozzi's connections with progressive education.

There is no index and no indication of the sources from which the quotations were taken.

POUND, ROSCOE. *New Paths of the Law.* Lincoln: Univ. of Nebraska Press, 1950. Pp. 69. $2.00.

POWICKE, F. M. *Ways of Medieval Life and Thought.* Boston: Beacon Press; March, 1951. $3.00.

QUASTEN, JOHANNES. *Patrology.* Westminster, Md.: Newman Press, 1950. Pp. 367. $5.00.

QUINE, WILLARD VAN ORMAN. *Methods of Logic.* New York: Henry Holt & Co., 1950. Pp. 264. $3.00.

REICHENBACH, HANS. *The Rise of Scientific Philosophy.* Berkeley: Univ. of California Press; March, 1951. $3.75.

Religion and the State. Vol. XIV, No. 1 of *Law and Contemporary Problems.* Durham: Duke University School of Law, 1950. Pp. 169. Paper, $1.25. [Incorrectly listed in the November "Bibliography"]

RENARD, HENRI, S.J. *The Philosophy of God.* Milwaukee: Bruce Pub. Co., 1951. Pp. xiv + 241. $2.75.

This is a brief textbook for a course in Thomistic natural theology. Those who are familiar with Father Renard's previous books need not be told that this book is brief and clear. In this work, each chapter is developed according to a common pattern; most of the articles are followed by an incisive summary.

RENOIRTE, FERNAND. *Cosmology.* Elements of a Critique of the Sciences and of Cosmology. Translated by James F. Coffey. New York: Joseph F. Wagner. In preparation.

RIEZLER, KURT. *Man Mutable and Immutable.* Chicago: Henry Regnery Co., 1950. Pp. 375. $5.00.

RUSSELL, BERTRAND. *The Impact of Science on Society.* New York: Columbia Univ. Press; March, 1951. $2.00.

RUSSELL, BERTRAND; TOYNBEE, ARNOLD J.; BARKER, ERNEST; GINSBERG, MORRIS; COLE, G. D. H.; TAYLOR, A. J. P., and OTHERS. *The Western Tradition.* Foreword by Lord Layton. Boston: Beacon Press; April, 1951. $2.00.

SANTAYANA, GEORGE. *Dominations and Powers.* New York: Chas. Scribner's Sons; April, 1951. Pp. 480. $4.50.

SIGERIST, HENRY E. *A History of Medicine.* Vol. I, *Primitive and Archaic Medicine.* New York: Oxford Univ. Press, 1951. $8.50.

SIMON, YVES R. *Philosophy of Democratic Government.* Chicago: Univ. of Chicago Press; May, 1951. $3.50.

SMITH, VINCENT EDWARD. *Footnotes for the Atom.* Milwaukee: Bruce Pub. Co.; March, 1951. $3.50.

Solovyov Anthology, A. Arranged by S. L. Frank. Translated by Natalie Duddington. New York: Chas. Scribner's Sons, 1951. Pp. 256. $3.50.

The selections from Vladimir Solovyov included in this volume have been gathered and arranged to give a full view of the many-sided genius of this poet, thinker, and mystic. Under the four headings of "God and Man," "The Church of Christ," "Beauty and Love," and "Morality, Legal Justice, Politics" are grouped representative and relatively complete selections. The poetry is

less well represented (only a sample is given in the Introduction); a part of "A Short Story of Antichrist" is given as an epilogue to illustrate the eschatological preoccupations of Solovyov's last years.

The Introduction gives a short account of Solovyov's life and tries to evaluate his message for modern readers. The main value of this message is said to be its insight into the value of the spiritual and its stressing of the personal, rather than the exterior, moral values. It is pointed out that some of Solovyov's thought was molded by the nineteenth century idea of progress and by gnostic-theosophical ideas (more accurately perhaps these could be called Neoplatonic-Christian ideas). Both in the Introduction and in an appendix it is said that Solovyov was never converted to Catholicism in the ordinary sense of conversion. (But see two recent articles: Heinrich Falk, S.J., *Stimmen der Zeit*, CXLIV (1949), 421-35 and Władimir Szylkarski, *Orientalia Christiana Periodica* (1950), 1-38.)

Appendix II gives the source of the translated selections; Appendix III lists the translated works.

SOROKIN, PITIRIM ALEKSANDROVICH. *Social Philosophies of an Age of Crisis.* Boston: Beacon Press, 1950. Pp. 356. $4.00.

SUAREZ, FRANCISCO, S.J. *Suarez on Politics.* Translated by George Albert Moore. Chevy Chase, Md.: Country Dollar Press, 1950. Pp. 140. $5.25.

SULLIVAN, REV. JOSEPH V. *The Morality of Mercy Killings.* Foreword by Rev. Francis J. Connell. Westminster, Md.: Newman Press. Pp. 98. $1.50.

SYNGE, F. F. *Science, Sense and Nonsense.* New York: W. W. Norton & Co.; May, 1951. $3.50.

TANNENBAUM, FRANK. *A Philosophy of Labor.* New York: Alfred A. Knopf, 1951. Pp. 199. $2.75

THILLY, FRANK, and WOOD, LEDGER. *A History of Philosophy.* Revised ed. New York: Henry Holt & Co.; spring, 1951.

THOMAS AQUINAS, ST. *Selected Writings of St. Thomas Aquinas.* Translated from the Latin. New American edition of "Everyman's Library." New York: E. P. Dutton & Co., 1950. Pp. 297. $1.25.

THOMAS, MARY EDITH. *Medieval Skepticism and Chaucer.* New York: William-Frederick Press. $3.00.

THOMPSON, CLARA. *Psychoanalysis: Evolution and Development.* New York: Hermitage House. $3.00.

TOLMAN, EDWARD CHACE. *Collected Papers in Psychology.* Berkeley: Univ. of California Press; March, 1951. $4.50.

TOULMIN, STEPHEN EDELSTON. *An Examination of the Place of Reason in Ethics.* New York: Cambridge Univ. Press, 1951. Pp. 242. $3.25.

ULAM, ADAM B. *Philosophical Foundations of English Socialism.* Cambridge: Harvard Univ. Press; March, 1951. $3.75

URBAN, WILBUR MARSHALL. *Beyond Realism and Idealism.* New York: Macmillan Co., 1951. Pp. 266. $5.00.

VIETOR, KARL. *Goethe the Thinker.* Translated from the German by Bayard Q. Morgan. Cambridge: Harvard Univ. Press, 1950. Pp. 222. $4.00.

WAKEFIELD, EVA INGERSOLL (ed.). *The Letters of Robert G. Ingersoll.* New York: Philosophical Lib., 1951. Pp. xii + 747. $7.50.

This is selection of the letters of the brilliant orator and notorious self-styled agnostic of the nineteenth century. The editor contributes a biographical and general introduction of over a hundred pages and introductory comments to each division of the letters. There may have been some historical justification for the Lucretian fervor of the orator himself; but today, in the light of the sorry fruits of eighteenth- and nineteenth-century rationalism, the gilded phrases of smug confidence have a ring of hollow mockery.

WILLIAMS, HARRY. *An Index of Mediaeval Studies Published in Festschriften, 1856-1946.* Berkeley: Univ. of California Press; March, 1951. $4.00.

WINDOLPH, F. LYMAN. *Leviathan and Natural Law.* Princeton: Princeton Univ. Press; June, 1951. $2.50.

WOOD, ERNEST EGERTON. *The Glorious Presence.* New York: E. P. Dutton & Co., 1951. Pp. 320. $3.75.

WORTIS, JOSEPH. *Soviet Psychiatry.* Baltimore: Williams and Wilkins Co., 1950. Pp. 329. $5.00.

ZILBOORG, GREGORY. *Sigmund Freud.* New York: Chas. Scribner's Sons, 1951. $2.00.

ZIMMER, HEINRICH. *The Philosophies of India.* Edited by Joseph Campbell. New York: Pantheon Books; May, 1951. Pp. 500. $5.00.

G. E. STECHERT & Co., New York - H. BOUVIER & Co., Bonn a/Rh - ATLAS PUBL. & DISTR. Co., Ltd, London - HERMANN & Cie, Paris - NICOLA ZANICHELLI, Bologna - EDITORIAL HERDER, Barcelona - F. MACHADO & C.ia, Porto - FRIEDRICH KILIAN'S NACHFOLGER, Budapest - F. ROUGE & C.ie, Lausanne - THE MARUZEN COMPANY, Tokyo.

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